TEXTILE TECHNOLOGY DIGEST

VOLUME 6 MAY 1949 NUMBER 5

Abstracts

(An explanation of the classification used in the Digest was published in the January (1949) issue (Vol. 6, No. 1) on the page facing the Index to Authors)

FIBERS A

Apparatus for conditioning textile fibers. Monsanto Chemical Co. Indian P. 37 223 (through *J. Sci. Ind. Research (India)*).

Today's textiles—fibers, fabrics, and finishes. Ethel L. Phillips, Univ. of Minn. *J. Home Econ. 41*, 79-82 (Feb. 1949).

This is a review of recent developments in the textile field. (Also published as Paper No. 643, Miscellaneous Journal Series, Minnesota Experiment Station).

F. A. O. COMMODITY SERIES No. 9, Sept. 1948. World Fibers Rev., 1948. Washington, Food and Agriculture Organization of the United Nations. Price: 25¢.

This publication from the point of view of the textile statistician is of the utmost importance as it is probably the most up-to-date compilation of its kind in the world. The Food and Agriculture Organization of the United Nations is probably in a better position to secure the necessary information than any other body. It is not possible to indicate, even as a brief abstract the contents of a pamphlet of this nature; it is the type of thing that has to be consulted as its stands. It appears to be almost entirely factual, little space being given to indications of trends, etc.—*J. Textile Inst.*

HANDBOOKS OF TEXTILE TECHNOLOGY No. 3. Manchester, The Textile Institute, 1948. 24 p.; 14 plates. Price: 5s.

This pamphlet describes the conclusions of the Institute's Unification of Testing Methods Committee on the identification of textile materials. It includes 14 excellent photographs and 4 tables showing the properties of different fibers. The subject is covered comprehensively, not only vegetable and animal fibers being dealt with but also synthetics.—*Fibres, Fabrics & Cordage.*

TEXTILE FIBERS AND THEIR USE. 4th ed. Katherine Paddock Hess. Philadelphia, J. B. Lippincott Co., 1948; 599 p.; Price: 27s.

The new edition of "Textile Fibers and Their Use" has been brought up to date by thorough revision and inclusion of the latest developments in synthetic fibers and processing generally. The arrangement of the text is designed to emphasize consumer interest in textiles and provide a comprehensive course of technical education in reference to the properties of the textile fibers and the performance characteristics of fabrics. The book is divided into 3 sections, the first of which deals with yarn and fabric construction, design and processing. The second part considers the fibers in great detail, whilst the final section concentrates upon the application of technical knowledge to the problems of the consumer. Special consideration has been given to the use of this work as a basis for teaching. Suggestions for laboratory work appear frequently in relation to the text and references to further reading are given at the end of each chapter. An interesting feature is the presentation of each subject in the form of a series of questions or problems, which are worked out systematically and effectively, introducing also reference to origins and earlier developments as a background to knowledge of the modern product. This extensive manual of fibers, fabrics and finishes brings out the necessity for a close basis of understanding between producers, distributors and consumers and is of value to all.

Natural fibers A 1

Bast fibers

Beating machine with several beatingboards and one beating-drum for processing leaves and plants. Sydney Shorter & Saml. Stanbridge. Ger. P. 121 769, Oct. 21, 1900. PB L 70330; frames 4278-4280. *Bibl. Sci. Ind. Reports 6*, 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Defibering drum for machinery used in processing of agave leaves, etc. Carl H. Behnisch. Ger. P. 156 253, Oct. 11, 1902. PB L 70330; frames 4394-4396. *Bibl. Sci. Ind. Reports 6*, 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Defibering machine with an oscillating table be-

tween 2 defibering drums and attached upper clamp, alternating on different parts of the leaves. Hubert J. Boeken. Ger. P. 116 264, Mar. 7, 1900. PB L 70330; frames 4292-4295. *Bibl. Sci. Ind. Reports 6* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Device for conversion of plant parts from one conveyor belt to another, used in machinery for producing textile fibers. Hubert J. Boeken. Ger. P. 155 865, May 8, 1904. PB L 70330; frames 4369-4371. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Device for rubbing or softening of hemp, jute, ramie and/or other plant fibers. H. Hamilton Benn. Ger. P. 117 938, Feb. 27, 1900. PB L 70330; frames 4285-4287. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Device for special separation of bast fibers and the woody parts therein, from the beating drum of machines for producing bast fibers from plant stems. Chas. J. Dear & International Fibre Syndicate Ltd. Ger. P. 116 069, Jan. 23, 1900. PB L 70330; frames 4310-4312. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for breaking fibrous materials. John V. Cook. USP 2 460 448, Feb. 1, 1949.

This invention provides an apparatus for breaking and scutching fibrous stalk material, such as hemp, flax, sisal, etc. which may be moved from place to place in the field, by tractor, and which is at the same time of sufficiently substantial construction to permit its use as permanent equipment in a mill. The apparatus comprises a stationary breaker bar, a beater roll, and a scutcher roll. The rolls are equipped with blades in intermeshing relationship which, in cooperation with the breaker bar, operate upon the stalks for severing the pith thereof into small hurds and dislodging them from the fibers of the stalk.

Machine for defibering. Hubert J. Boeken. Ger. P. 118 127, Mar. 29, 1900. PB L 70330; frames 4281-4284. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for hackling and scutching fiber-containing plant stems. Hugo Wolff. Ger. P. 85 084, Nov. 28, 1894. PB L 70330; frames 4386-4390. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept.

26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for producing and processing plant fibers. Ferdinand F. Rotter. Ger P. 159 480, May 31, 1904. PB L 70330; frames 4355-4357. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Method for refining spinning material from bast fibers. Dick E. Radcluffe & Taylor Brurows. Ger. P. 86 836, Apr. 1895. PB L 70330; frames 4383-4385. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for removing woody components from plant stems. Soc. Lacote et Marcon Freres. Ger. P. 114 673, Sept. 3, 1899. PB L 70330; frames 4319-4321. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for separating fibers from plant stems. R. J. Eke. Ger. P. 106 359, Dec. 29, 1897. PB L 70330; frames 4345-4347. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for separating bast fibers from plant stems. Willard N. Packer. Ger. P. 111 808, Mar. 18, 1899. PB L 70330; frames 4375-4379. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machinery for separating the fibers from the woody parts of stems and leaves of the plants with hackling plates. Saml. B. Allison. Ger. P. 125 867, May 12, 1900. PB L 70330; frames 4274-4277. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Process and device for mechanical production of fibers directly fitted for spinning from fresh plants and plant parts. Gerit M. E. Pos. Ger. P. 266 207, June 12, 1912. PB L 70330; frames 4325-4330. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); *in German.*

Process and device for production of fibers from leaves and leaf-like growths with hard outer surface. Hubert J. Boeken. Ger. P. 263 787, Dec. 3, 1912. PB L 70330; frames 4322-4324. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

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Shaking mechanism for breaking plates of plant hackling machinery. Wm. B. Gray. Ger. P. 151 281, June 19, 1903. PB L 70330; frames 4334-4336. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Lesser known fibers: Banana. Anon. *Fibres 10,* 71 (Feb. 1949).

This is a general discussion of the banana fiber and its characteristics. Commercial production of the fiber has not been practical due to the low yield of fiber, the lack of proper equipment for its extraction, and its inferiority to other fibers more cheaply produced.

Machine for splitting banana fibers into spinnable small fibers. Franz Szymanski. Ger. P. 110 563, May 13, 1899. (Supplement to Ger. P. 102 915, Mar. 25, 1898). PB L 70330; frames 4364-4368. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Apparatus for manufacturing coir fiber. Perera. Indian P. 37 250 (through *J. Sci. Ind. Research (India)*).

Cotton

COTTON IN THE CONVERTING INDUSTRY. Frank A. McCord & Raymond Steinbach, Jr., Memphis, Tenn.; Natl. Cotton Council of Am., 1948; 22 p.

This report is based on information supplied by converters in personal interviews held during the summer and fall of 1948. Its purpose is to present a cross-section of the opinions of converters on cotton's competitive position and to set forth their suggestions and recommendations for strengthening cotton's position through research and sales activities. For the purpose of this report, use of the term "converter" applies to both integrated and non-integrated companies unless otherwise indicated. It includes not only the independent converters who buy gray goods, have them finished to specifications and sell them in the finished form, but also to the integrated companies which process fabrics similar to those handled by independent converters.—*Introduction.*

COTTON'S INCREASING COMPETITION FROM SYNTHETIC FIBERS AND PAPER; WHAT BREEDERS AND SPINNERS SHOULD BE DOING TOWARDS MEETING IT. R. B. Evans. Washington, USDA, 1948. 15 p.; Gratis.

Fiber and yarn—I-II. The prediction of yarn strength from fiber properties. G. Dakin, Brit. Cotton Res. Assn. *Fibres 9,* 424-6 (Nov. 1948); *10,* 11-15 (Jan. 1949). (To be continued.)

Part I deals with the prediction of yarn strength from a knowledge of fiber properties by the "statistical" approach to the problem, i.e. the measurement of staple length, fineness, breaking strength, etc. Part II discusses the physical method of predicting yarn strength, i.e. by small-scale spinning tests, and includes discussion of some raw cotton tests that should be made to supplement the spinning tests.

Refractive index of cotton fibers. A. N. Gulati, D. L. Sen K. P. R. Pillai. *Indian Cotton Growing Rev. 2,* 209-11 (Oct. 1948).

This discussion of the refractive index of cotton fibers is a summary of the literature, based on 8 references.

Fiber product

Apparatus for forming felt. Ivor Griffith & Alfred P. Huchberger (to The Frank H. Lee Co.). USP 2 462 487, Feb. 22, 1949.

In the manufacture of felt hats it is customary to deposit fur upon a cone by inducing a suction through perforations in the cone to draw the fur onto the cone. This method is in many ways unsatisfactory, one of its major objections being the large amount of power required to operate the suction pumps for this operation. By the improved method of this invention, the fur is caused to take an electrostatic charge and is then attracted to an oppositely charged surface upon which it is deposited, deposition being very uniform and forming a felt structure, which after further processing yields an extremely uniform felt.

Feltlike products. Carleton S. Francis, Jr. (to Am. Viscose Co.). USP 2 459 803, Jan. 25, 1949.

Felts of substantial strength and high tenacity are made from a mixture of normally non-felting fiber and synthetic resin fibers, the non-felting fibers being maintained in a felted condition by the thermal tackiness of the resin fibers. Among the fibers which may be used are cotton, flax, jute, kapok, silk, and the like, or synthetic fibers of cellulosic composition, natural and synthetic rubber and derivatives thereof; alginic acid, gelatine, casein; and mineral fibers such as spun glass, asbestos, mineral wool and fibers made of natural and synthetic resins; also fibers and filaments

made by slitting, cutting or shredding non-fibrous films, such as waste Cellophane. The potentially adhesive resin fibers are fibers which have an inherent tackiness upon heating to a temperature below that at which the non-felting fibers are damaged or rendered tacky.

Present status of bonded fabrics. R. B. Seymour, Johnson & Johnson, & G. M. Schroder, H. H. Frede & Co. *Rayon & Syn. Tex. 30,* 49-50 (Feb. 1949); 43-4 (Mar. 1949).

This is a review of bonded fabrics, the processes for making them, and their uses, based principally upon the patent literature.

Tampon machine and method for making tampons. Henry Ganz (to The Personal Products Corp.). USP 2 462 178, Feb. 22, 1949.

This invention embodies a novel automatic machine for making tampons rapidly, at a low cost and with a minimum of manual labor. It comprises a novel mechanism for feeding a web of absorbent fibrous material, such as a carded cotton web, in a predetermined path and while in said path and if desired, folding said web and thereafter separating a predetermined length of said folded web from the remainder of the web. This predetermined length of folded web is then moved by a novel positioning mechanism operating in timed relationship with the feeding and separating mechanism to position the length of folded web over a novel die carried on a novel turret which may be indexed from position to position by a novel drive mechanism. The novel mechanism is coupled with the die carrying turret to couple a draw cord with the individual folded web length after insertion into the die. Also cooperating with the die carrying turret is a novel mechanism for inserting the individual folded web into the die and for compressing the same into tampon of predetermined size and contour.

Flax

Artificial drying of flax with an experimental drying machine made by Friedr. Haas. J. J. Ghijsen. Rijksvoorlichtingsdienst (Now the Vezelinstituut T. N. O.) Delft, Netherlands. Communication No. 60 (1940).

Artificially dried and subsequently scutched flax appeared to be inferior to flax dried in the open, as a rule, except when squeezed and washed before drying. However, the market value, as determined by the subjective judgment of the flax

experts, is strongly influenced by external appearance. The squeezed fibers were brighter in color, but were found to have a lower breaking strength than flax dried in the open. It is concluded that the squeezing should be done very carefully to prevent damage to the fiber.

Device for drying and simultaneous loosening of woody parts from chemically treated flax stems. Antoine Badoil & Paul Graziana. Ger. P. 112 431, Jan. 4, 1900. PB L 70330; frames 4380-4382. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Device to remove the seed husks from flax stems. Bruno Noeldner & Franz Neugebauer. Ger. P. 152 742, Aug. 26, 1903. PB L 70330; frames 4348-4350. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Drying flax with infrared rays in the V. I. drying machine. H. J. Selling. Vezelinstituut T. N. O. Communication No. 77.

The machine is described and illustrated. The results of 2 drying tests are given and costs are estimated. The machine requires 1 k.w.h. to evaporate 1 kg. of water.

Experience with an accelerated flax retting process in practice. A. D. J. Meeuse. Vezelinstituut T. N. O., Delft, Netherlands; *in Dutch.*

Ghijsen's accelerated retting process (T. N. O. Communication No. 64; preceding abstract) was put into operation in an industrial retting plant, where a system was developed for producing flax more economically by using the new method on flaxes which ret easily and the old method on those which ret slowly. The new process required only 2 days, compared with 3 days for the old method. By using the 2 methods simultaneously, the operations are distributed more evenly throughout the week. The products of the 2 processes did not differ greatly in quality, strength, fineness, nor in composition. The scutching yield was also about the same. Cost estimates showed that the slightly higher costs of the equipment required for the new process are compensated by the increased capacity resulting from the acceleration of retting.

Experiments on a laboratory, semi-plant and commercial scale with an accelerated flax-retting process. J. J. Ghijsen. Vezelinstituut T. N. O. Delft, Netherlands. Communication No. 64 (1942); *in Dutch.*

Inoculation with various pure cultures of bacteria were tried, with little success. Inoculation with aerated retting water from a preceding ret was then tried. The retting water was kept at 25-30°C while air was blown through it until the pH rose from 4.5 to 7.5-8.0. This took about 30 hrs. Later, the temperature was increased to 37°C with satisfactory results. Maximum retting effect was obtained when 5% of volume of the areated liquid was added to the tank. This decreased the retting time by 40% in the semi-plant runs. When repeated on the plant scale in retting tanks of the Belgian type, the time was only 20% shorter. The product was judged by experts to be equal to that of the usual method. There was no difference in scutching yield.

Feeding table for flax processing machinery. E. J. de Courcy & Robert Crawford. Ger. P. 116 137, Dec. 5, 1899. PB L 70330; frames 4307-4309. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for cleaning and scutching of flax. E. J. de Courcy & Robert Crawford. Ger. P. 115 654, Dec. 19, 1899. PB L 70330; frames 4313-4315. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machinery for processing flax. E. J. de Courcy & Robert Crawford. Ger. P. 117 481, Dec. 5, 1899. PB L 70330; frames 4288-4291. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Threshing machine for flax. Francois J. Maizier. Ger. P. 46 122, Nov. 3, 1887. PB L 70330; frames 4296-4303. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Threshing machine for flax. Ignaz Mikulsky. Ger. P. 73 168, June 17, 1893. PB L 70330; frames 4304-4306. *Bibl. Sci. Ind. Reports 6,* 1180 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for carroting loose fur. Edw. A., & Jas. McP. Culhane & David D. Wilson (to John B. Stetson Co.). USP 2 459 924, Jan. 25, 1949.

The loose fur is allowed to fall freely through a chamber in which it is sprayed with the carroting solution projected horizontally from nozzles placed around the periphery of the chamber. The machine will treat or carrot cheap fur, which has heretofore been thrown away, so that it will felt and can be used for such purposes as making hats.

Jute

Processing of jute by Hiparol and bacterial pectinases. Parakutty Baruah & H. K. Baruah. *Fibres 10,* 55-9 (Feb. 1949).

Major conclusions reached as the result of large-scale experiments in the processing of jute by Hiparol and bacterial pectinases, are: (1) Long jute, without the roots being cut, can be cleaned and softened by using Hiparol (a mixture of enzymes extracted from *Thielaviopsis paradoxa,* a tropical fungus) and processed in the construction of sacking warp and Hessian warp; (2) jute root cuttings or bale and line cuttings of very poor quality can be used, after treatment with Hiparol, to some extent in the construction of sacking warp. A more comprehensive report on this work will be issued in the future. (See also TTD: *5,* 552).

Wool-like product from jute fibers. Goltz. Indian P. 37 794 (through *J. Sci. Ind. Research (India)*).

THE FLAX, HEMP AND JUTE YEAR BOOK AND DIRECTORY, 1948. Belfast, H. R. Carter Publications, Ltd., 1948; Price: 25s 9d.

This books gives a description of modern practice in the conversion of flax into linen from the growing and harvesting of the plant to the bleaching, dyeing and finishing of the fabric, and also contains sections on jute preparing, spinning and weaving, the preparation and spinning of hard fibers, the manufacture of ropes and cords, and ramie growing, decortication, preparation and spinning. There is a Directory of the linen, jute cordage and allied industries in Great Britain and Ireland, arranged both alphabetically and by trade sections.—*Publisher.*

Australian jute substitute plant; posidonia fiber from marine beds. Eric Hardy. *Jute & Canvas Rev. 20,* 5, 9 (Feb. 1949).

This is a brief discussion of *Posidonia Australis,* a marine flowering plant found in abundance along the shores of Spencer's and St. Vincent's Gulfs in South Australia. The posidonia fibers closely resemble jute fibers although they are somewhat shorter (2-8 in); other features of the fiber are its resistance to rot, comparative non-inflammability, and its ability to take acid dyes. The fiber has been under study by the Imperial Institute and Department of Chemistry of South Australia for several years. Treatments have been developed to improve the flexibility of posidonia fiber which is naturally extremely brittle. The fiber is suitable

for the manufacture of backings for oilcloths, linoleums, carpets and rugs, and for mixture with low quality wool. It is also useful as an insulating fiber.

New fiber—Posidonia Australis—a seaweed for industrial utilization. C. MacMillan. *L'Industrie Textile 725*, 73 (Apr. 1947).

This plant grows in shallow water near the coast of Southern Australia. Its tensile strength is less than that of jute, and it is very brittle. Treatment with H_2SO_4 increases its flexibility, however. It is too rough for use in fine textiles, except in blends. It may eventually serve as a substitute for jute. It is more resistant than jute to biological deterioration. It can also be used as an insulating material. Two companies are already making considerable progress in the study of its commercial utilization.

Ramie

Device for cleaning ramie, etc. fibers from woody and bark parts after hackling. Pierre P. Faure. Ger. P. 160 144, Nov. 5, 1901. PB L 70330; frames 4358-4360. *Bibl. Sci. Ind. Reports 6*, 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

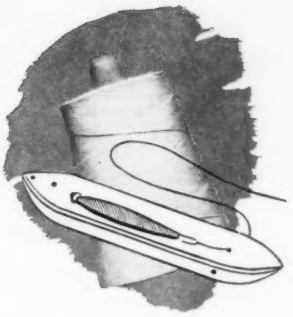
Device for loosening ramie fiber. Edmund C. Marc. Ger. P. 62 181, Apr. 29, 1891. PB L 70330; frames 4351-4354. *Bibl. Sci. Ind. Reports 6*, 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

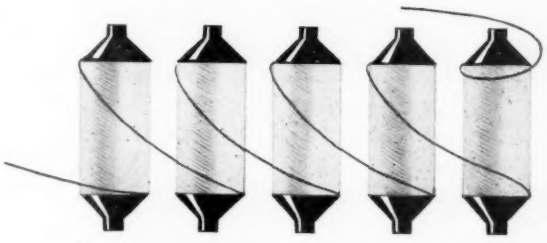
Device for mechanical production of stalk bast, especially ramie bast after previously splitting the stem. Max Einstein. Ger. P. 270 836, Oct. 17, 1911 (Supplement to Ger. P. 239 679). PB L 70330; frames 4331-4333. *Bibl. Sci. Ind. Reports 6*, 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for debarking of ramie stems and other similar fiber material. Alfred D. Estienne. Ger. P. 79 123, Jan. 28, 1894. PB L 70330; frames 4372-4374. *Bibl. Sci. Ind. Reports 6*, 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for scutching of fiber-yielding plant stems especially ramie. Chas. L. J. Bertin & Soc. Francaise de Ramie. Ger. P. 159 117, June 22, 1902. PB L 70330; frames 4391-4393. *Bibl. Sci. Ind. Reports 6*, 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Machine for debarking stems of ramie and other similar fiber material. Alfred D. Estienne.





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Ger. P. 82 682, Nov. 8, 1894. (Supplement to Ger. P. 79 123, Jan. 28, 1894). PB L 70330; frames 4361-4363. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Method and equipment for debasting of ramie and similar spinning fiber. Chas. Piazzi & Napoleon Tedesco. Ger. P. 62 161, Oct. 18, 1891. PB L 70330; frames 4337-4344. *Bibl. Sci. Ind. Reports 6,* 1181 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Wool

GERMAN WOOL INDUSTRY DURING THE PERIOD 1939-1945. Brit. Intelligence Objectives Subcommittee Report 1806. Price: 1s.

Specialty fibers. W. S. Haigh. *Fibres 10,* 41-3, 62 (Feb. 1949).

This is a report of a paper given before the Halifax Textile Society and is a discussion of specialty hair fibers: cashmere, camel, mohair, and alpaca. A number of photomicrographs of the fiber cross-sections are given and data on breaking strength are presented in a table.

WOOL AND WOOL MANUFACTURES (basic information sources). Compiled by A. L. Fougler, Jr. Office of Domestic Commerce, U. S. Dept. of Commerce. Washington, U. S. Dept. of Commerce, 1949. 9 p. Free.

This publication lists government and private agencies issuing information on wool. Publications available from the various sources are also given.

WOOL TEXTILE INDUSTRY. Final Report of the Joint Factory Advisory Committee. (Ministry of Labor and Natl. Service). 60 pp.; Price: in USA 35¢ post free.

The final report of the committee established in March, 1945, to investigate the best methods of complying with the Factories Act, 1937, as to problems in the industry affecting the employees' welfare. The committee was composed of representatives of the Factory Department of the Ministry and of employers' and workers' associations.

WOOL WAX; A REVIEW OF ITS PROPERTIES, RECOVERY, AND UTILIZATION. D. T. C. Gillespie. Washington, Hobart Publishing Co., 1948. 94 p.; Price: $5.00.

See TTD: *6,* 82.

Artificial fibers A 2

Apparatus and methods for producing staple fibers. Kohorn. Indian P. 35 968 (through *J. Sci. Ind. Research (India)*).

Apparatus for coordinating the operating rate of forming thread with the drawing thereof. Alden H. Burkholder (to Industrial Rayon Corp.). USP 2 454 731, Nov. 23, 1948.

In the production of artificial fibers by extrusion, a stroboscopic device is used to correlate the rate at which the thread is formed with the rate at which it is taken up so that a uniform filament is produced.

Artificial filaments. Kohorn. Indian P. 36 167 (through *J. Sci. Ind. Research (India)*).

Artificial filaments and films composed of polymeric esters. Imperial Chemical Industries Ltd. Indian P. 37 383 (through *J. Sci. Ind. Research (India)*).

Artificial filaments and method and plant for making the same. Kohorn. Kohorn & Kohorn. Indian P. 35 966 (through *J. Sci. Ind. Research (India)*).

Artificial filaments and method of making the same. Kohorn. Indian P. 36 168 (through *J. Sci. Ind. Research (India)*).

Artificial yarns and process of producing the same. Wm. W. Watkins (to E. I. du Pont de Nemours & Co.). USP 2 451 420, Oct. 12, 1948.

It is an object of this invention to provide an improved process for the wet-spinning of an acrylonitrile polymer yarn and produce thereby a yarn that possesses a sufficiently high tenacity and elongation to render it suitable for use in the textile art and that has a lustrous appearance, and is substantially free of voids along its length; an improved spinning bath for use in such process is also provided. This is accomplished, in general by the steps of extruding a solution of an acrylonitrile polymer in a volatile organic solvent through a shaped orifice into a spinning bath heated to a temperature of at least 100°C and comprising a liquid that is non-solvent for the polymer but is capable of producing a compact yarn, i.e. a yarn having an "area ratio" of not more than 2.1, passing the yarn through the bath for a distance sufficiently long to substantially completely coagulate it, and maintaining the yarn during at least the latter portion of its travel through the bath under a tension of at least 0.5 g per denier.

Continuous production and/or treatment of artificial threads (addition to No. 36 824) (Divided out of No. 36 824. Lustrafil Ltd. Indian P. 38 627 (through *J. Sci. Ind. Research (India)*).

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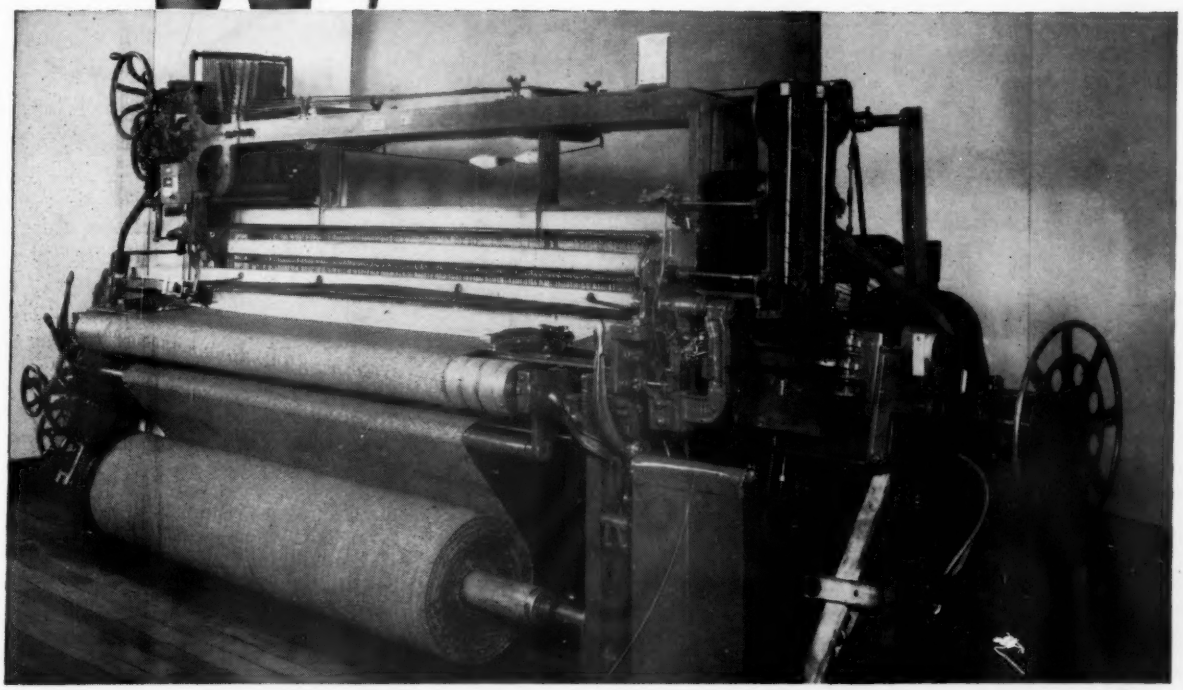

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Continuous production of synthetic filaments. Swiss Borvisk Co. Indian P. 36 969 (through *J. Sci. Ind. Research (India)*).

Copolymer of isopropenyl acetate and vinyl chloride. Rudolph L. Hasche & Edw. M. McMahon (to Eastman Kodak Co.). USP 2 453 317, Nov. 9, 1948.

Copolymers suitable for use in injection molding, extrusion, in the making of films, fine threads, and impregnating agents for textiles comprise a resinous copolymer of isopropenyl acetate and vinyl chloride containing 38-54% by weight of chlorine, the copolymer having been prepared from a monomeric mixture consisting of isopropenyl acetate and vinyl chloride.

Drying wound packages. Graeme G. Whytlaw (to Am. Viscose Corp.). USP 2 454 854, Nov. 30, 1948.

A method is described for drying filamentary material in the form of wound packages, particularly those packages which lack a rigid internal support, such as rayon "cakes" formed within spinning buckets. The packages are placed in individual imperforate moisture-absorbent wrappers of non-fibrous material produced from a solution of cellulose. These wrappers greatly retard the flow of moisture outwardly from the cakes, thereby preventing undue case-hardening, but at the same time allow sufficient moisture removal to prevent excessive building up of temperature and humidity within any portion of the cakes. CAC

Effect of aluminum chloride in treating rayon staple with formaldehyde. Schaeffer. PB L 73632; frames 5235-5271, 1943. *Bibl. Sci. Ind. Reports 6,* 1137 (Sept. 26, 1947); Price: Enlargement print $4.00; *in German.*

Fabrics composed of synthetic linear polyesters. Imperial Chemical Industries Ltd. Indian P. 37 061 (through *J. Sci. Ind. Research (India)*).

Fibrous materials. Imperial Chemical Industries Ltd. Indian P. 36 913 (through *J. Sci. Ind. Research (India)*).

General background information on Vinyon N yarns. Anon. *Rayon & Syn. Tex. 30,* 65-7 (Jan. 1949); 70-1 (Mar. 1949).

In this discussion of the properties of Vinyon N yarns, the effect of various processing operations on these properties are noted. A number of

applications for Vinyon N are described briefly.

Heat treatment of highly polymeric linear esters. Imperial Chemical Industries Ltd. Indian P. 37 053 (through *J. Sci. Ind. Research (India)*).

Made-to-order "fibers" help build increasing new market in men's apparel. W. A. B. Davidson. *Rayon & Syn. Tex. 30,* 71 (Jan. 1949); 83-4 (Feb. 1949).

This is a discussion of synthetic fibers and the place they are finding in fabrics for men's suits. The special requirements of fabrics in this field are noted.

Means for removing excess liquid from filamentary material. Henry J. McDermott (to Am. Viscose Corp.). USP 2 460 390, Feb. 1, 1949.

This invention provides a method for removing excess liquid from liquid-treated filamentary material to better prepare the material for drying or further treatment. It also equalizes the amount of treating liquid carried by all portions of the continuous lengths of filamentary material. The excess liquid is removed by continuously advancing the liquid-treated thread through a confined space and subjecting it to the action of suction. CAC

Method and apparatus for spinning artificial filamentous products. Ernest D. Copson & Robt. J. Taylor (to Am. Viscose Corp.). USP 2 457 350, Dec. 28, 1948.

In accordance with this invention, there is provided a novel arrangement of apparatus which makes it possible to subject filaments spun in one bath to an after-stretching or to any other processing treatment in a separate bath while still maintaining the filaments in the form of a web-like sheet which may comprise a plurality of layers of intercrossing filaments. This is especially important when dealing with extremely fine-diameter filaments because such filaments are generally severely damaged if attempts are made to re-open a condensed yarn-like bundle thereof. The apparatus is applicable to the spinning of materials such as cellulose acetate, viscose, and the like, and synthetic linear polymers. This invention is a modification of apparatus and methods described in USP 2 399 258, USP 2 399 259 and USP 2 399 260. (See TTD: *3,* 269).

Method of making lightweight filamentous structures. Robt. J. Taylor (to American Viscose Corp.). USP 2 461 094, Feb. 8, 1949.

A wet bundle of continuous filaments in a plastic condition mixed with continuous filaments in an elastic condition is stretched in a longitudinal direction and the stretched bundle collected while still wet in the form of a multiple-layered winding. This winding is cut crosswise and dried in the form of a band. The dried band is then stretched laterally and allowed to increase in thickness. The elastic filaments return to their original length and cause the plastic filaments to crinkle. The product may be used for thermal insulation or as filter medium. Methods of producing the filamentary bundle are also claimed.

Method of manufacturing synthetic sutures and the like. John P. Hollihan, Jr. (to Am. Viscose Corp.). USP 2 461 602, Feb. 15, 1949.

A method is provided for the manufacture of threads and the like comprising an integral mass of fibers which occur in animal sinews, tendons, and the like, which comprises suspending the fibers in an aqueous acid solution, extruding the suspension into non-basic coagulating and dehydrating medium to form acidic filaments, withdrawing and drying the thus formed acidic filaments and raising the pH on the filaments while swelling the fibers to approximately twice their normal dry size by treating them with water to which has been added from about 6 to 6.5 cc of concentrated ammonium hydroxide and from about 1 to 1.2 grams of ammonium chloride, per liter, and thereafter drying the filaments while stretching them from about 14 to 16%.

Method of mat formation. Piero Modigliani & Harry E. Holcomb (to Johns-Manville Corp.). USP 2 460 899, Feb. 8, 1949.

Filament-forming material, such as molten glass, is drawn out on a drawing drum or drums, and is then passed through a constriction, through which a current of air is also drawn, into a felting chamber, in which the velocity of the air stream is reduced. Here, the filaments tend to whip around and become entangled to form a continuous mat, which is removed by a conveyor. The thickness of the mat may be varied by controlling the speed of the conveyor relative to the peripheral speed of the drums or rotors. As distinguished from prior practice, the method and apparatus produces mats or felts of uniform, open character in a continuous, substantially automatic operation, requiring no reorientation of the fibers.

Modification of synthetic linear polyamides. Imperial Chemical Industries Ltd. Australian P. 130 759, Aug. 3, 1945.

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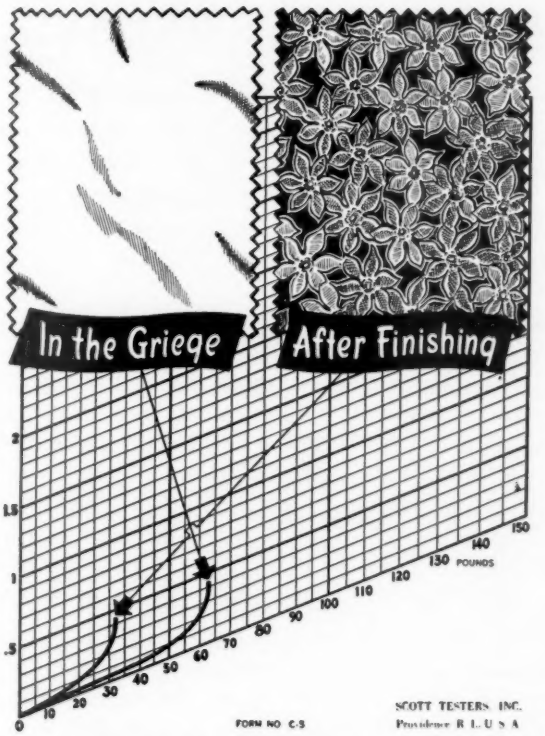

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New and improved artificial filaments. Imperial Chemical Industries Ltd. Indian P. 37 028 (through *J. Sci. Ind. Research (India)*).

New changes in denier and filament numbers of Am. synthetic yarns. H. R. Mauersberger. *Rayon & Syn. Tex. 30*, 44-6 (Mar. 1949).

A complete list of all the synthetic yarns available from the principal producers is given. Changes are specifically noted.
HAM

New highly polymeric linear esters and the production of filaments, fibers and the like therefrom. Imperial Chemical Industries Ltd. Indian P. 36 196 (through *J. Sci. Ind. Research (India)*).

Orlon acrylic fiber—a new synthetic. J. B. Quig, E. I. du Pont de Nemours & Co., Inc. *Textile Bull. 74*, 40, 42, 44 (Dec. 1948); *Rayon & Syn. Tex. 30*, 79-80 (Feb. 1949), 67-9 (Mar. 1949).
See TTD: *6*, 101.

Process and apparatus for drying threads. Kohorn, Kohorn & Kohorn. Indian P. 35 967 (through *J. Sci. Ind. Research (India)*).

Process and apparatus for the production of synthetic thread. Am. Bemberg Corp. Indian P. 37 967 (through *J. Sci. Ind. Research (India)*).

Process for incorporating pigments or delustrants with highly polymeric linear esters. Imperial Chemical Industries Ltd. Indian P. 37 057 (through *J. Sci. Ind. Research (India)*).

Production of polymers from carbylamine and carboxylic compounds. Henry Dreyfus (to Celanese Corp. of Am.). USP 2 455 983, Dec. 14, 1948.

Linear polymers suitable for use as films, foils, coating compositions, moulding powders, plastics, sheets, filaments, and other textile materials may be produced by heating one or more organic compounds containing carblamine radicals and carboxyl radicals. On heating at suitable temperatures, reaction takes place between the carbylamine and the carboxyl radicals, thus linking up the molecules of the organic compound or compounds to form long chain macro-molecules.

Rayon. North American Rayon Corp. Indian P. 38 218 (through *J. Sci. Ind. Research (India)*).

Reaction product of N-substituted polyamides with hydroxylated materials and process for obtaining same. Boynton Graham (to E. I. du Pont de Nemours & Co.). USP 2 456 271, Dec. 14, 1948.

This patent describes the preparation of new polymeric substances that can be formed into films, fibers, coatings or molded objects. These substances are prepared through the reaction of an N-alkoxymethyl polyamide with a material containing a plurality of alcoholic hydroxyl groups. The polymers have improved properties such as increased insolubility in water and organic solvents, and increased molecular weight.
GNR

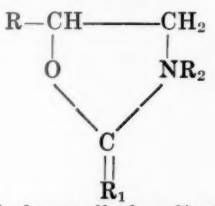
Stabilizing highly polymeric linear esters. Imperial Chemical Industries Ltd. Indian P. 37 058 through *J. Sci. Ind. Research (India)*).

Traverse mechanism for rayon pot-spinning machine. Hartley. Dodson & Barlow Ltd. Indian P. 38 048 (through *J. Sci.Ind. Research (India)*).

Cellulose

Cellulose oxazolidone ethers and method of making same. Frank K. Signaigo (to E. I. duPont de Nemours & Co.). USP 2 459 547, Jan. 18, 1949.

This invention is a method of preparing cellulose oxazolidones wherein the oxazolidone nucleus is attached to the cellulose unit by an ether link, which comprises reacting, in the presence of alkali, a cellulosic substance selected from the class which consists of cellulose and low substituted cellulose ethers with an oxazolidone having the following general formula:



wherein R is a halogenalkyl radical selected from the group which consists of chloroalkyl and bromoalkyl; R_1 is selected from the group which con-

sists of O and NH; and R_2 is a radical selected from the group which consists of alkyl, aryl, aralkyl, and hydrogen. The cellulose oxazolidone derivatives of this invention can be utilized in the production of shaped articles, such as films, yarns, fibers, etc.

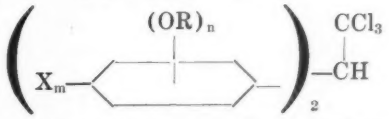
Chemically treated wood pulp and a method of producing a cellulosic product. Paul H. Schlosser & Kenneth R. Gray (to Rayonier Inc.). USP 2 451 558, Oct. 19, 1948.

This patent relates to the incorporation into a cellulosic solution prior to spinning, of a small quantity (0.01 to 0.2% by weight) of a mixed ether containing a polyalkylene oxide radical and a substituted aryl hydrocarbon radical. Such a compound improves the characteristics of the spinning solution and the efficiency of the spinning operation. These mixed ethers should be dispersible or preferably substantially soluble in water.

GNR

Filaments of plasticized lower fatty acid esters of cellulose. Amerigo F. Caprio & Wm. Horback (to Celanese Corp. of Am.). USP 2 460 377, Feb. 1, 1949.

It has been found that by incorporating a halogenated-diphenyl-trichlorethane plasticizing agent of the following general formula



wherein R is an alkyl group, X is a halogen, *m* is at least 1 and *n* is 0, 1 or 2 in the base material from which said yarns and filaments are formed or in the spinning solution from which the yarns are spun, excellent textile properties are imparted to all yarns and filaments. Examples of the halogenated-diphenyl-trichlorethane compound are dichloro - diphenyl - trichlorethane, phenyl - chlorphenyl - trichlorethane or difluoro - diphenyl - trichlorethane, or the nuclear alkoxy substituted derivatives thereof such as dichlor-dimethoxy-diphenyl - trichlorethane or dichloro - diethoxy - diphenyl-trichlorethane. Fabrics may be woven of these yarns and filaments very efficiently and the fabrics thereby obtained are substantially free of many of the weaving faults normally encountered in the production of fabrics, e.g. they are substantially free of slubs, shirry appearance, etc.

Process of conditioning cellulose ester filaments. John B. Eisen (to Am. Viscose Corp.). USP 2 461 043, Feb. 8, 1949.

This invention provides a process of conditioning freshly dry-spun continuous filaments containing a cellulose organic ester which comprises applying thereto in advance of their first collection, at a room temperature between about 15°C to about 45°C, a non-volatile, non-aqueous conditioning medium which is liquid throughout the range of room temperature. The medium is a solution in a mineral oil vehicle of about 5 to 20% of an ethylene oxide condensation product of a partial higher fatty acid ester of an inner ether of a hexitol and a higher fatty alcohol sulfate in a relatively small proportion, compared to the vehicle, for imparting antistatic properties to the filaments. The filaments are thereafter collected by winding.

Process of ripening cellulose esters. Robt. D. Rowley & Robt. F. Thompson (to Celanese Corp of Am.). USP 2 461 572, Feb. 15, 1949.

Ripened organic acid esters of cellulose of improved stability may be obtained by first neutralizing all of the acid catalyst present in the primary cellulose ester solution obtained on the completion of esterification, then heating the neutralized solution to a temperature of 80 to 130°C for 4 to ½ hrs., and after adding water for ripening, ripening the primary cellulose ester in the heated solution to a secondary cellulose ester of the desired solubility characteristics. The amount of water introduced with the neutralizing agent, where the latter is added in aqueous solution, or produced by the neutralization reaction, should preferably be insufficient to hydrolyze all of the anhydride present. Neutralizing agents which may be employed are acetates of Mg, Zn, Al, Ca, Sr, Ba, and hydroxide of the alkaline earths. Sodium compounds should not be used.

Rapid aging of alkali cellulose. H. V. & R. S. V. Kohorn. Indian P. 36 171 (through *J. Sci. Ind. Research (India)*).

Recovery of water-soluble cellulose esters. Robt. M. Creamer (to Celanese Corp. of Am.). USP 2 448 082, Aug. 31, 1948.

This process is claimed to provide an efficient and economical method for the recovery of water-soluble organic acid esters of cellulose from the solution in which they are formed. The process is a direct extraction and avoids the use of several solvents. Briefly, it involves the following steps: (1) neutralzation of the acid catalyst; (2) counter-current extraction of the unchanged organic acid with a water-insoluble organic solvent such as isopropyl ether or a mixture of ethylacetate and benzene; and (3) removal of the ex-

cess water by evaporation, distillation, or other process. The cellulose esters produced have excellent stability.
GNR

Stabilized cellulose acetate. Wm. J. Simpson & Donald Finlayson (to Celanese Corp. of Am.). USP 2 454 950, Nov. 30, 1948.

The undesirable action of ultra-violet light on cellulose acetate or other cellulose esters or ethers is greatly reduced by including in the cellulose ester or ether, or compositions containing them, the residues of 2 or more molecules of aromatic hydroxy carboxylic acid. (See also USP 2 432 517, TTD: *5*, 260).

Protein

Continuous-filament casein yarn. Robt. F. Peterson, Robt. L. McDowell & Sam. R. Hoover, Eastern Region Res. Laboratory. *Textile Research J. 18*, 744-8 (Dec. 1948).

A process for the production of continuous-filament casein yarn by pot-spinning is described. Fiber of excellent softness and warmth was produced; tensile strength of 1.0-1.2 g per denier and elongation of 50% were obtained. Data obtained from numerous tests are presented.

Extraction of protein from seeds. Robt. L. Wormell, Alfred F. Millidge & Claude L. Knight (to Courtaulds Ltd.). USP 2 461 404, Feb. 8, 1949.

This invention provides a process for the production of solutions of protein, suitable for spinning in the manufacture of threads, from protein-containing seeds which comprises the steps of impregnating the seeds with not more than about 4 times their weight of a dilute aqueous solution of an acid chosen from the group consisting of sulphuric acid, hydrochloric acid and phosphoric acid, the pH value of the solution being not greater than 2.0 removing water from the impregnated seeds to concentrate the acid on the seeds to a concentration of at least 25% by weight by heating the impregnated seeds at a temperature below the carbonization temperature of the seeds, washing the seeds until they are free from acid and subsequently forming a solution suitable for spinning by extracting the protein from the seeds with a solution containing an alkaline reagent, water and less than 40% of an organic solvent chosen from the group consisting of acetone and water miscible monohydric alcohols.

Manufacture of artificial protein filaments. Robin H. K. Thomson (to Imperial Chemical Industries Ltd.). USP 2 460 372, Feb. 1, 1949.

According to the present invention the process for the production of improved and crimped filaments from insolubilized filaments obtained by wet-spinning from solutions of casein or vegetable globulins comprises wet-stretching the insolubilized filaments, retaining the filaments in the stretched condition while subjecting them to raised temperature and treatment with formaldehyde, and thereafter withdrawing the tension and effecting the shrinkage of the thus treated filaments to the desired degree of crimp. If desired, the wet stretched filaments may be dried off under tension at raised temperature before the formaldehyde treatment is commenced. The drying is conducted at a temperature not less than 80°C, and if desired the filaments may be further heated to a temperature of 100° to 120°C before commencing the formaldehyde treatment.

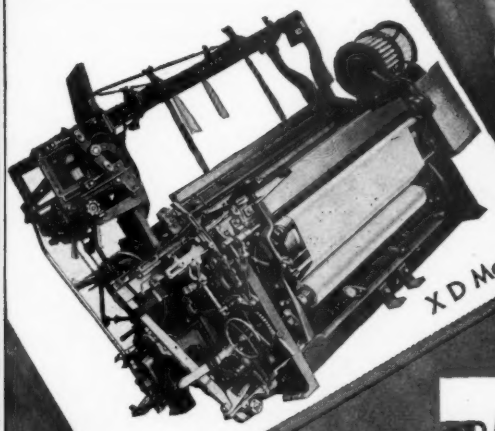
Manufacture of artificial textile fibers. Antonio Ferretti (to Attorney Gen. of the U. S.). USP 2 450 889, Oct. 12, 1948.

Wool-like artificial fibers may be made from animal casein prepared by the coagulation of skim milk, forming a viscous spinning solution by ripening the casein with a caustic alkali to which there is added a mineral constituent selected from the group consisting of sodium and potassium silicates. Subsequent processing includes spinning the fibers from the ripened solution and coagulating them in an acid bath, rendering the fibers insoluble, and deacidifying them.

Manufacture of casein textile filaments and fibers, or mixed casein and cellulose filaments and fibers. Ferreti. Indian P. 38 452 through *J. Sci. Ind. Research (India)*).

Stabilized alkaline vegetable protein solutions. Alfred F. Millidge & Claude L. Knight (to Courtaulds Ltd.). USP 2 459 952, Jan. 25, 1949.

This invention provides an aqueous alkaline solution of vegetable protein (e.g. protein which is present in bean or pea meal, nut meal, etc.) which is suitable for extrusion in the manufacture of threads, and which contains as a stabilizing agent, a cyanide from the group consisting of the alkali metal cyanides, the alkaline earth metal cyanides and ammonium cyanide, the cyanide being present in an amount not exceeding about 0.1% based on the weight of the solution. This amount is suf-



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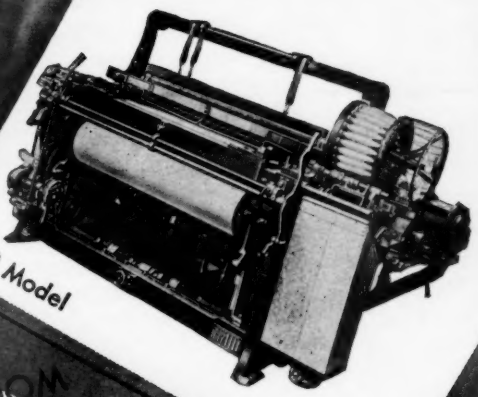

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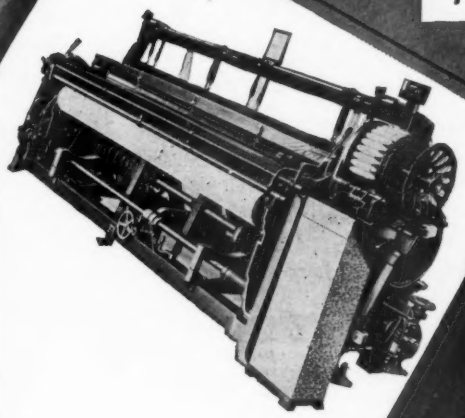

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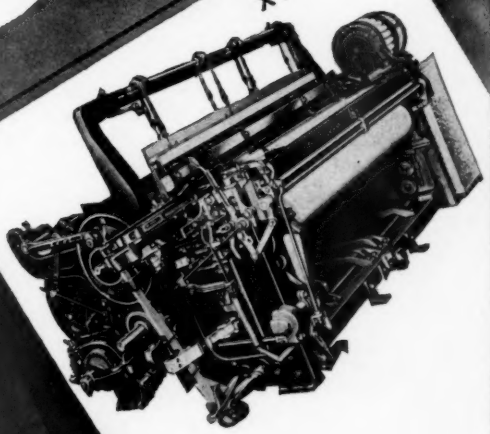

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ficient to prevent gelling and darkening of the solution and the formation of a skin on its surface.

Viscose

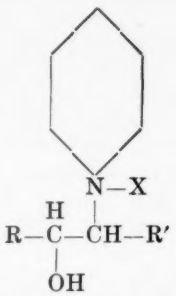
Concentration of spinning baths for viscose. Bernard Soyand. *L'Industrie Textile 724,* 60 (Mar. 1947).

The concentration and composition of the coagulating bath is maintained by evaporating, first at atmsopheric pressure and 110°C approximately, second, by evaporating under vacuum. The vapors are scrubbed to remove acid. The apparatus is illustrated by means of a diagram.

Methods of making viscose and viscose produced by said methods. Kohorn. Indian P. 33 358 (through *J. Sci. Ind. Research (India)*).

Process of spinning viscose artificial silk, filaments comprising threads, staple fibers, bands and the like. Theeuwis A. H. Blaas (to Naamlooze Vennootschap Kunstzijdespinnerij Nyma). USP 2 451 148, Oct. 12, 1948.

In the spinning of viscose, employing spinning nozzles which tend to become clogged, the process which comprises preventing such clogging by adding to at least one of the liquids which come into contact with said nozzles during spinning a small amount of a pyridin compound, which is not surface active, of the general formula:



wherein R represents an aromatic radical containing no more than 6 C atoms, R′ represents a substituent selected from a class consisting of hydrogen, aliphatic hydrocarbon groups containing no more than 2 C atoms and aryl groups containing no more than 6 C atoms, and X represents a substituent selected from a group consisting of OH and a monovalent acid radical.

Study of viscose filament yarn production. E. R. Dewey, Foundation for the Study of Cycles. *Rayon & Syn. Tex. 30,* 66-8 (Apr. 1949).

This is the first of a series of 3 articles on the production and consumption of viscose filament yarns,

based upon a report by the author entitled: "Trends and Cycles in the Production of Rayon —A Study of Viscose Filament Yarn Production in the United States, 1911-1948." It is suggested that the production and consumption of viscose filament yarn follows a 6-yr. cycle. The cyclic variations from 1910 to 1948 are given.
HAM

YARN PRODUCTION B

Apparatus for producing staple fiber yarn. Kohorn. Indian P. 38 655 (through *J. Sci. Ind. Research (India)*).

New method of mechanical packaging. Claude Bernet. *L'Institute Textile* No. 723, 31-2 (Feb. 1947).

A method of packaging quills in boxes for shipment is described and illustrated with 5 figures.

Roller covers for use in textile machinery. The Dayton Rubber Co. Indian P. 38 180 (through *J. Sci. Ind. Research (India)*).

Short processing in spinning. W. W. C. Ball, Bowker & Ball, Ltd. *Fibres 9,* 481-2 (Dec. 1948).

This is an account of the experience of the author's firm with short processing in the production of coarse carded yarns. By the modification or elimination of certain of the processes normally used in cotton spinning, economics of considerable size were realized, particularly in the card room.

Spinning cotton, rayon and wool on the American system. R. J. McConnell, Whitin Machine Works. *Rayon & Syn. Tex. 30,* 75-7 (Apr. 1949).
See TTD: *6,* 105.

Slubs in worsted yarn I-II. R. S. Audley. *Fibres 9,* 386-8 (Oct. 1948); (to be cont.). 441-2 (Nov. 1948).

Causes of slubs in worsted yarn are discussed and means are suggested for their elimination.

Textile machine fiber-containing elements. The Dayton Rubber Co. Indian P. 36 642 (through *J. Sci. Ind. Research (India)*).

Fiber preparation B 1

Improvements in the opening and cleaning of fibrous materials. Owen & British Cotton Industry Res. Assn. Indian P. 37 385 (through *J. Sci. Ind. Research (India)*).

Method and apparatus for cleaning asbestos. Frank J. Koehne (to Johns-Manville Corp.). USP 2 460 938, Feb. 8, 1949.

This invention provides a method of opening and cleaning crude asbestos fibers which comprises, suspending the fibers in an air vortex while rotating the air adjacent the periphery of the vortex at a velocity sufficient to comb the fibers into longitudinal alignment with the rotational direction of their movement, periodically developing air movement adjacent the periphery of the vortex in a direction transversely to the direction of fiber movement whereby to flex and bend the fibers, thereby splitting the fibers and liberating impurities and finally separating clean fine fibers from incompletely opened fibers and from liberated impurities.

New preparatory machines speed wool scouring. Gustav Zellnik. *Textile World 99*, 118-9, 206-11 (Feb. 1949).

The East Weymouth Wool Scouring Company has developed a Proctor-Leonard Rocar system for opening wool prior to the scouring process. The system consists of a feed hopper which contains one doffer with retracting teeth, one 36 in. dia. cylinder, 1 worker and stripper and 1 stripper with a retracting-pin beater. From the hopper unit the wool is conveyed to a second section similar in arrangement to the first, but with finer pins. Production rates depend on the width of the opening unit. The 4-foot Rocar unit can process from 4,000-6,000 lbs. per hr., while the 6-ft. unit can handle from 7,000-8,000 lbs. per hr. A number of advantages are noted, including increased yarn strength of about 25%.

Opening and cleaning machines for fibrous materials. Freeman & Linnert. The British Cotton Industry Res. Assn. Indian P. 38 707 (through *J. Sci. Ind. Research (India)*).

Scouring wool. Lucson Corp. Australian P. 131 057, Dec. 19, 1945.

Kerosene and pine oil are compounded in approximately equal proportions and may have added thereto a minute quantity of a material having a characteristic odor such as oil of bergamot. In a process 2 baths are used containing water, soda ash and soap so that the alkalinity is approximately .4% in the first bath and .97% in the second bath and also containing the kerosene-pine oil mixture in proportion 3½ gals. to 1000 gals. of bath for the first bath and 5⅝ gals. to 1000 gals. of bath for the second.

Scouring wool. The Mathieson Alkali Works. Australian P. 131 111, Aug. 19, 1946.

In the process of scouring wool with an aqueous solution comprising soda ash, sodium bicarbonate and soap, greatly improved results are obtained if the ratio of sodium carbonate to sodium bicarbonate is controlled within the limits of from 1:05 to 1:2. Double titrations are made on samples taken periodically from the scouring liquor using 0.09 normal hydrochloric acid and as indicators, phenolphthalein in the one and methyl orange in the other. The required ratio is calculated by taking the figure obtained by multiplying the number of ccs. of HCl required to reach the phenolphthalein end point by 1.06, and the figure obtained by multiplying the difference between twice the number of ccs. of HCl required to reach the phenolphthalein end point and the number of ccs. of HCl required to reach the methyl orange end point, by 0.84. This ratio may be maintained within the prescribed limits by the addition of sodium hydroxide solution to the liquor in the case of "shorn" (acid) wool, or by the addition of sodium bicarbonate in the case of "pulled" (alkaline) wool.

Carding and combing B 2

New cotton carding system gives high production and improved quality. Anon. *Textile Recorder 66,* 55-6 (Jan. 1949).

The operation of the "Nuclotex" system of carding (Brit. Provisional Patent No. 20 407, 1948) is described. The new system, which is extremely simple, operates as follows: A secondary licker-in is situated immediately below the orthodox licker-in and has its own mote-knife and undercasing. The lap from the picker is fed to the primary licker-in in the usual manner, the licker-in striking in a downward direction at the fringe of the lap fed through the dish plate. A considerable proportion of the larger and heavier impurities are stripped from the licker-in by the 2 mote-knives. A portion of the cotton adhering to the primary licker-in is brought into contact with the smaller diameter secondary licker-in, also travelling in a downward direction, rotating at a higher speed. The action of the secondary licker-in is to remove still more of the impurities from the cotton. The impurities escaping the action of the first licker-in will in most instances be extracted by either the secondary licker-in or by the card cylinder. The inventor claims that there is a definite combing action taking place between the lickers-in which is reflected in the quality of the carding.

Drafting and roving B 3

Adapter for sliver drawing machines. Mahadevia. Indian P. 36 573 (through *J. Sci. Ind. Research (India)*).

Drawing frames and like textile machines. J. Airey. Howard & Bullough Ltd. Indian P. 38 192 (through *J. Sci. Ind. Research (India)*).

Drawing frames for long staple fibers. Jas. Mackie & Sons Ltd. Indian P. 40 022 (through *J. Sci. Ind. Research (India)*).

Fiber condensers for use in preparatory and spinning machines. Casablancas High Draft Co. Ltd. Indian P. 36 830 (through *J. Sci. Ind. Research (India)*).

French drawing system. I-II. R. S. Audley. *Fibres 9,* 463-5 (Dec. 1948); *10,* 50-2 (Feb. 1949).

Features of the French drawing system are described with reference to composition of sets, sliver reduction, gill boxes, porcupine drawing, rubbing leathers, and humidification.

Self-threading delivery mechanism for drawing frames. Jas. Mackie & Sons, Ltd. Indian P. 38 777 (through *J. Sci. Ind. Research (India)*).

Spinning B 4

Design innovations in yarn spinner. G. F. Norcross, McGlynn Hays Industries, Inc. *Machine Design 20,* 108-10 (Oct. 1948).

Construction and operation of the McGlynn Hays ring spinning machine are described briefly and illustrated. Among the features noted are: worm-screw jacks placed at 5-ft. intervals, chain-driven from a motor, which raise and lower the 50-ft. draft rail at a uniform rate over its entire length; a cam-actuated bobbin builder which employs a chain to vertically oscillate the ring rail continuously; and a unique spindle drive which drives 20 spindles on one continuous thin cloth belt with hard-drawn aluminum tubes used instead of pulleys.

Drafting and twisting fibrous material in spinning frames. Douglas Fraser & Sons Ltd. Indian P. 39 775 (through *J. Sci. Ind. Research (India)*).

Driving means for spinning, twisting, and like spindles. Jose Serra y Sió. USP 2 460 152, Jan. 25, 1949.

This invention drives 8 spindles instead of the customary 1 on a band driven frame, or 4 on a tape drive. The invention claims a saving in power, ease of construction, and reduction of moving parts.
JAW

Improved textile spindle. Muninagappa. Indian P. 39 118 (through *J. Sci. Ind. Research (India)*).

Rolls for textile working machines. Remfry. Indian P. 36 361 (through *J. Sci. Ind. Research (India)*).

Ring spinning frame. Arthur A. Worth & Harold S. Adams (to American Woolen Co.). USP 2 461 952, Feb. 8, 1949.

A stop motion is provided for ring spinning frames which, without the attention or the exercise of skill by the operator, will always stop the machine at a predetermined point in the traverse, usually near the middle of the traverse, whether the stopping is done by the operator or results from exhaustion of the supply, thus eliminating the difficulties normally involved when the machine is stopped at either the bottom or the top of the traverse.

Shirley high draft system. Anon. *Fibres 10*, 68-9 (Feb. 1949).

As a result of experience gained in the use of the Shirley high draft system, first introduced several years ago, a number of modifications have been made. The operation of the system is described briefly with particular reference to the improvements. (See also *Textile Recorder 66*, 57-8 (Jan. 1949).

Spinning machine of the "Chapon" type. Lovinfosse. Indian P. 36 844 (through *J. Sci. Ind. Research (India)*).

Spinning ring and traveler. Harvey E. Herr (to Herr Mfg. Co., Inc.). USP 2 461 470, Feb. 8, 1949.

This invention provides a spinning ring having a lower bearing face the substantially right angles to the ring-axis and an inner bearing face extending upwardly and outwardly from the inner edge of the lower bearing face in oblique fashion to the horizontal, and a traveler of substantially \/-shape mounted on said ring and having the legs thereof terminating in oppositely-bent feet, one of the traveler legs and its foot, during the operation of the traveler, engaging flatwise and coextensively along the inner and lower bearing

faces of the ring, respectively, in contiguous fashion, and the complementary traveler-leg and its foot being clear of the top portion of the ring and with the vertex of the traveler positioned outwardly of said inner bearing face. This arrangement counteracts or eliminates any tendency of the traveler to jump up and down on the ring during the spinning operation and accordingly insures a smooth running traveler and uniform thread tension.

Spinning ring and traveler. Harvey E. Herr (to Herr Mfg. Co., Inc.). USP 2 461 546, Feb. 15, 1949.

The bearing faces of the ring are so disposed as to provide for an upward and outward thrust or pressure of the traveler against the ring at all times to counteract or eliminate any tendency of the traveler to jump up and down on the ring during the spinning operation and accordingly insure a smooth running traveler and uniform thread tension. The traveler-engaging portion of the ring is substantially frusto-conical in cross-section to provide an upwardly and outwardly extending inner bearing face and downwardly-facing annular shoulders at the inner and outer sides of the ring, and wherein the traveler is complementary in shape to engage the inner bearing face and adjoining inner shoulder during its operation about the ring, while the remaining portion thereof is free from contact with the ring to provide ample space for the movement of the thread.

Spooler rejects. L. M. Howell, Howell-Wilson Associates. *Textile Bull. 74*, 47-8, 50, 52 (Dec. 1948).

In a talk before the fall meeting of the South Carolina Division, Southern Textile Assoc., the author discussed yarn defects with special reference to the efforts of his firm to stop them at the source rather than at the snick plate.

Stretching mechanism for textile fibers in spinning machines. Termens. Indian P. 38 292 (through *J. Sci. Ind. Research (India)*).

Traveller for circular spinning machines. Kjaeby. Indian P. 36 857 (through *J. Sci. Ind. Research (India)*).

Traverse drives for rayon spinning frames. H. I. Kintz & R. R. Prechter. Gen. Electric Co. *Elec. Eng. 68*, 345-6 (Apr. 1949).

Two new types of traverse drives have been developed for use on a rayon cap spinning frame. One is an electronic-amplidyne generator traverse

drive in which the rotary motion of a motor is converted into linear motion of the traverse rail, and the other is a hydraulic traverse drive in which the required straight line motion is secured directly from a power piston. The advantages of the hydraulic drive over the conventional mechanical drives are presented.
CAC

Winding and spooling B 5

Device for winding the yarn over the bobbin. Rajagopalan. Indian P. 37 543 (through *J. Sci. Ind. Research (India)*).

Increasing the rate of production in the throwing operation. Lucien Caulnais. *L'Industrie Textile 724*, 56-7 (Mar. 1947).

Methods of doubling and twisting by means of hollow double twisting spindles are reviewed and a device patented by the Rhodiaceta Company is described in detail with the aid of diagrams. This machine increases production without increasing the speed of the spindle. The bobbin is rotated in the direction opposite to that of the spindle so that the yarn makes more than 2 turns on itself for each revolution of the spindle. (The patent reference is not given).

Lint removal means for bobbin winding machines. Russell P. Drake (to Barber-Colman Co.). USP 2 460 736, Feb. 1, 1949.

An exhaust system is provided for removing the lint produced at the yarn traversing and yarn tension devices on bobbin winding machines. The exhaust system comprises hood partially enclosing these devices, a suction fan driven by an electric motor, and an outlet duct which discharges into a collector.

Skein winding machines. F. Osborne. Ayrton & Co. Ltd. Indian P. 35 223 (through *J. Sci. Ind. Research (India)*).

Winding device. Wm. J. Elvin & Elmer R. Stahl (to Celanese Corp. of Am.). USP 2 462 310, Feb. 22, 1949.

This is a device for producing yarn packages having a transfer tail which consists of a rotating spindle, a ring rail reciprocated to produce a chaser motion with a traverse stroke of uniform length, a mechanism for superimposing a builder motion on the chaser motion, and means for momentarily extending the length of the downward traverse stroke of the reciprocating ring

rail below the normal traverse stroke thereof to wind a small amount of yarn at a point away from the main body of yarn, to be used as a transfer tail.

Yarn tensioning device. Raymond Dewas. USP 2 457 450, Dec. 28, 1948.

This invention is a disc tension device with improvements to avoid clogging by fly waste. The invention differs from standard devices in that the spindle hangs from the top instead of coming up from the bottom. Present devices have a tendency to raise or jump as they rotate. This jumping causes a variation in tension which is a serious fault in winding. The new device eliminates this fault by reducing clogging.
JAW

Yarn processing B 6

Twist setting yarn of polymeric esters. Imperial Chemical Industries Ltd. Indian P. 37 032 (through *J. Sci. Ind. Research (India)*).

Special yarns B 7

Cellulose suture. Johnson & Johnson Pty. Ltd. Australian P. 130 814, Feb. 4, 1946.

An absorbable surgical suture is prepared by oxidizing cellulose thread sufficiently to cause its reduction to zero strength at the pH of body tissue in not less than the period of time required for normal healing of a sutured wound.

Composite yarns. Imperial Chemical Industries Ltd. Indian P. 36 912 (through *J. Sci. Ind. Research (India)*).

Fancy yarns I-VII. A. T. C. Robinson. *Fibres 9*, 90-4 (Mar. 1948); 180-6 (May 1948); 259-64 (July 1948); 343-7 (Sept. 1948); 445-6 (Nov. 1948); 466-9 (Dec. 1948); *10*, 46-8 (Feb. 1949).

The construction and manufacture of fancy yarns is discussed in some detail; also considered are slub yarns, analysis, and machinery.

Improved yarns, threads, cord, and like articles. Imperial Chemical Industries Ltd. Indian P. 37 026 (through *J. Sci. Ind. Research (India)*).

Yarn products B 8

Aluminum covered glass thread. Arthur Biddle (to Reynolds Metals Co.). USP 2 458 243, Jan. 4, 1949.

★ REPUTATION ★

The fitful gleam of two lanterns shining from the steeple of the Old North Church in Boston was the signal that sent Paul Revere on his historic ride through the night — a ride which electrified the New England countryside and spread the fame of the rider throughout the world.

In the space of a single night, Paul Revere gained for himself a reputation which will live forever. But in the manufacturing world of today, reputations are not made overnight. It takes years to assemble an organization of men, equipment and experience which must be combined before a worth-while reputation for quality of product and fair dealing can be established.

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A central filamentary core of glass is wrapped with a narrow strip of metal in the form of a spiral to form a composite thread which retains the high tensile strength of the glass fiber and can be fabricated without deterioration due to friction. This friction is especially low when a ribbon of aluminum or its alloys is used. The fabric so produced reflects sound, heat and electrical waves more than does ordinary glass fabric. The material can be used for fire curtains, for example, which may be repeatedly rolled with little deterioration and are more resistant to fire, probably because of reflection of heat. The composite thread may be produced with equipment heretofore used in the production of other spirally wrapped threads or yarns.

Bobbin tensioning mechanism. Ben Carter. USP 2 459 617, Jan. 18, 1949.

This invention relates to the bobbin carriers of braiding and like machines, the bobbins carried thereby being the source of supply of the wire, thread or like material for introduction into the machines for the making of the braided or other goods. These carriers include a tensioning device, which rises and falls in a loop of the wire or thread as variations occur in the tension of the wire, and they also include means for removing and replacing the bobbins quickly.

Braiding machine bobbin carrier. C. P. Park. Australian P 131 238, Dec. 15, 1945.

To reduce inertia effects and to retain good wearing characteristics, a bobbin carrier is provided in which the base portion is in the form of a casting of a bearing metal such as phosphor bronze, while the upper component is of a relatively light alloy, one of the said components having a projecting portion about which a local part of the other component is cast, guide fins being provided having wear resisting ends which may be hardened steel pins inserted in holes. The specification includes also tensioning means having means to prevent overrunning.

"Monocord" joins family of textile yarn forms. Anon. *Textile World 99*, 125, 216 (Jan. 1949).

A new process for the manufacture of untwisted textile yarns has been developed by Belding Corticelli of New York. The new cord is neither a monofilament nor a coated or resin-treated thread. Details of the process have not yet been released. It is claimed to be applicable to nylon, rayon, cotton and other textile fibers. (See also TTD: *6*, 27).

LCL

Retardation of heat-induced strength loss in cotton yarns by liquid ammonia treatment. Harry B. Moore, Southern Regional Res. Laboratory. *Textile Research J. 18*, 749-55 (Dec. 1948).

In exploratory work done to determine whether the strength loss of cotton caused by heat (e.g. as in tire cords) could be reduced by chemical treatments, yarns and rovings were treated with liquid ammonia. After prolonged heating at 160°C, it was found that the treated yarns had a smaller loss of strength but no strength changes were found in the fibers. Microscopic examination of the ammonia-treated yarns showed that they were much more crinkled, twisted, and convoluted than the untreated yarns. This crinkling, resulting from overnight heating at 160°C, was observed in several sets of fibers. The ammonia-treated samples also increased their convolution on heating, afterwards exceeding the untreated fibers in this respect. It was concluded that the increase in strength of cotton yarns treated with dry liquid NH_3 and heated overnight at 160°C over the strength of the untreated yarns must be due to some frictional effect inside the yarn which comes into play at that temperature, because it was observed only in yarns and not in fibers, and was not observed in unheated yarns.

Spool holder. Wm. C. Adlman. USP 2 460 209, Jan. 25, 1949.

This invention provides a spool holder for braiders in which the thread is elastically suspended after it leaves the spool, by the use of a long helical spring which is stretched by the tension of the thread and seeks to return to its initial position, the spring in its operative position being stretched about 2 times its initial unstretched condition. The spring is connected directly with the thread and has no weights of any kind. The free floating upper end of the spring is entirely free to float in response to the thread, and the free upper end of the spring abuts directly against the pawl of detent which engages the ratchet on the upper end of the spool or bobbin. The pawl releases the bobbin to furnish an additional supply of thread and a weighted loop member is provided outside of the spool, through which the thread passes as it leaves the spool or bobbin and before it passes through the spring.

FABRIC PRODUCTION C

Cotton machinery adaptable to linen-type rayons. S. A. G. Caldwell. *Textile World 99*, 108-9 (Jan. 1949).

Linen-type spun rayon fabrics can be made satisfactorily on cotton machinery operated with proper care. The greatest precaution necessary is that concerned with operations which apply tension to the yarn, because of the greater extensibility of spun rayon yarn in comparison with linen or cotton yarn. In warp sizing of this yarn, the weight increase should be the minimum for efficient working usually in the range of 6-10% of the weight of the yarn.

LCL

Geometry of cloth structure. J. Pollitt. *J. Textile Inst. 40,* P11-P22 (Jan. 1949).

In a lecture, the need for cloth geometry is discussed and the more important formulas and the use to which they can be put are noted. Basis for the discussion is "Geometry of Cloth Structure", by Dr. F. T. Peirce, published by *J. Textile Inst.* in 1937. The discussion is limited to plain weaves. Study of cloth geometry is important in the development of cloths for specific end uses, e.g. for waterproofness.

So you want good cloth. 1-3. Frank D. Herring. *Textile Bull. 74,* 69-70, 72, 74 (Nov. 1948); 57-8, 60, 62 (Dec. 1948); *75,* 61-2, 64, 67 (Jan. 1949).

This is a series of articles devoted to a discussion of cloth production. Subjects covered to date are: preparation of the size mix, and preparation and application of size. (To be continued).

Yarn preparation C 1

Brake and tension for warp beamers. Chas. W. Burrum. USP 2 460 569, Feb. 1, 1949.

This invention relates to an improved brake and tension regulating device for use on a long chain beamer. In a mechanism of this kind the warp comes to the long chain beamer in rope form, and the purpose of the beamer is to straighten out the ends in the rope warp, separate them on an expansion comb, and wind the ends onto a section beam ready for slashing and other purposes. In order to perform this operation the warp chain must be stretched from the beamer to the tension frame, a distance of about 30 ft., so that the ends will separate gradually from the chain form into a sheet form and not be jerked, twisted and broken. This invention provides means for applying a retarding action on the drums in the remote tension frame, so that the proper amount of tension will be placed on the warp between the tension drums and the expansion comb through which

the warp passes in sheet form. Means are also provided for stopping the section beam and the drums of the tension frame at the same instant so that the chain warp will not become slack between the beamer and the tension drums nor will it become too taut.

Sizing of aromatic polyester yarns. Imperial Chemical Industries Ltd. Indian P. 37 098-100 (through *J. Sci. Ind. Research (India)*).

Sizing textile yarns and improved sizing composition. Monsanto Chemical Co. Indian P. 36 516 (through *J. Sci. Ind. Research (India)*).

Variable warp tensioning means. Adolf Lanz (to Baumwoll-Spinnerei & Weberei Wettingen). USP 2 460 512, Feb. 1, 1949.

This invention relates to an arrangement for use on looms for producing woven effects by conducting threads separated out from the warp over an oscillatory member operated during the weaving, so as to subject the separated threads to an alternating tension and so that effects corresponding thereto will be produced in the fabric, the appropriate selection of threads deflected out of the normal web of the remaining warp serving to effect a more or less pronounced wavy form of the weft wherein the wavy portions may be of uniform or nonuniform configuration. The oscillatory member is preferably disposed between the upper warp beam that carries all of the warp threads and a lower beam which serves solely for guiding the threads deflected out of the warp, the threads passing separately from the warp beam to the upper warp beam, so that operative conditions suitable for producing woven effects can remain unchanged from full to empty beam, an advantage accruing from the arrangement being that the weaving zone remains unencumbered by the supplementary means used, and another advantage being that the supplementary arrangement can be applied without difficulty to already existing modern looms, for example, those provided with automatic warp thread stop devices.

Weaving C 2

Automatic looms for weaving. Shimwell. Indian P. 39 863 (through *J. Sci. Ind. Research (India)*).

Automatic pick and pick loom. Carl P. Bergstrom & Archibald J. Herard, Jr. (to Crompton & Knowles Loom Works). USP 2 460 319, Feb.

1, 1949 (See also USP 2 460 318).

Looms of the type to which this invention relates are usually provided with a center stop motion which detects for weft breakage during each forward beat of the lay and which will stop the loom, preferably before the lay reaches front center, when the weft breaks. The present invention provides means by which the controller, when moved to controlling position by the detector during the early part of the 4-pick cycle, can be locked throughout the major part of the cycle and not have its setting lost if the current through the solenoid is cut off by the stopping of the loom.

Automatic weaving device. Werner & Kubelka, Zbrojobka Brno Narodni Pondik (Brno Arms Factory Natl. Corp.). Indian P. 38 559 (through *J. Sci. Ind. Research (India)*).

Balanced loom operation. Frederick D. Snyder (to Westinghouse Electric Corp.). USP 2 459 595, Jan. 18, 1949.

This patent describes a method of correlating the operation of a plurality of loom motors, whose operating loads are of the unbalanced flywheel type, so that large vibrating stresses are not transmitted to the building. This is accomplished by operating the motors in pairs in such a manner that the 2 motors comprising each pair are operated out-of-phase to thus balance the individual unbalanced loads.
CAC

Bobbinless loom for weaving ribbons. Vallaguzza. (Indian P. 39 822 (through *J. Sci. Ind. Research (India)*).

Checking of shuttles in power looms. I. H. Thomas & J. J. Vincent. *J. Textile Inst. 40*, T30-T44 (Jan. 1949).

The checking of shuttles has been studied by obtaining the displacement time relation for the shuttle when being checked in the shuttle box. From this relation was obtained the maximum value of the retardation and the speed of impact of the shuttle with the picker. The position at which the shuttle came to rest was also observed. The maximum value of the retardation was found to vary from about 50*g*, for a 45-in. loom fitted with a controlled shuttle binder adjusted to stop the shuttle just short of the picker, to at least 220*g* for a 60-in. fast-reed loom with a plain shuttle binder (*g* is the acceleration due to gravity). The speed of impact of the shuttle with the picker was negligible with a controlled shuttle binder, but was high (up to 40 ft. per sec.) when

plain shuttle binders were employed. The variation of the rest position of the shuttle over 1,000 picks was about ½ in. to ¾ in. The use of an accelerometer giving direct readings of the maximum retardation is described, and comparisons of results obtained by the 2 methods are made. It is shown that the accelerometer may fail to respond to high transient values of the retardation, but this does not impair its usefulness for comparative purposes.

Circular weaving looms. M. Fayolle. Indian P. 38 707 (through *J. Sci. Ind. Research (India)*).

Cloth roll attachment for lace looms. Edward W. Medberry (to Marshall Field & Co.). USP 2 461 387, Feb. 8, 1949.

A porcupine roll and a friction roll are mounted at the outlet end of the loom and spaced parallel to each other so that a cloth roll can be cradled between them. The friction roll is driven at a faster peripheral speed than the porcupine roll. This attachment requires little or no attention from the operator. The woven material may be cut at any time, the roll of material removed, and a new roll placed in position in a very short period of time.

Correcting harness and heddle faults. H. E. Wenrich. *Rayon & Syn. Tex. 30*, 77-9 (Apr. 1949).

Pictures of cloth defects are used to illustrate heddle faults.

Electric control system for circular looms. M. Fayolle. Indian P. 39 071 (through *J. Sci. Ind. Research (India)*).

Electric weft detecting system for looms. Victor F. Sepavich (to Crompton & Knowles Loom Works). USP 2 445 641, July 20, 1948. (See also USP 2 460 318-9).

An electric weft detecting system for pick and pick weft replenishing looms provides for the holding of an indication of weft exhaustion by means of an electronic circuit which maintains a solenoid energized until the point in the loom cycle is reached at which such energization can be utilized for setting the magazine for transfer.

Electric weft detector for looms. John C. Manoog & Walter H. Wakefield (to Crompton & Knowles Loom Works). USP 2 462 326, Feb. 22, 1949.

Electric weft detectors of the type in common use require metallic ferrules on the weft carrying

bobbins. Several hundred bobbins may be required for each loom, and since they must all be equipped with ferrules, the cost of the latter becomes a large item in the expense incident to the use of such detectors. The present invention provides an electric detecting system employing an electromechanical detector not requiring ferrules on the bobbin and connected to an electronic circuit to secure the advantages and sensitivity of such a circuit. The device comprises a side slipping weft detector which normally maintains 2 contacts or electrodes in engagement with each other to preserve normal conditions in the detecting system, and rely upon a very slight angular movement of the detector to separate the contacts. The detecting system is so arranged that the separation of the contacts gives indication of exhaustion by changing the electric condition of the grid of an electronic tube with resultant energization of loom controlling electric circuit means.

Experimental study of shuttle projection. I. H. Thomas & J. J. Vincent. *J. Textile Inst. 40,* T1-T29 (Jan. 1949).

A method is described for measuring the displacement of the shuttle and the rotation of the loom crank-shaft relative to time and to each other; from the measurements, shuttle and loom speeds and accelerations can be derived. It was found that the initial and average shuttle speeds were approximately equal and ranged from 31 to 48 ft. per sec. on the 15 looms measured. The different speeds produced by different nose-bits were found to be approximately proportional to the nominal displacements after 30° rotation of the crank-shaft. The shuttle speed was approximately directly proportional to the average loom speed during picking, approximately inversely proportional to the distance of the picking cam from the picking shaft, and independent of the mass of the shuttle and the position of the buffer. The timing of the pick produced no effect if the lay were stationary, but under normal conditions unsystematic changes occurred, though on the whole a later pick gave a higher shuttle speed. Shortening the lug strap and lowering the picking bowl usually increased the shuttle speed. With old lug straps prolonged weaving produced little change, but with new straps the shuttle speed became lower as weaving progressed, partially recovering during rest periods.

Flaw detector for looms. Andrew B. Shelton (to A. B. Shelton Corp.). USP 2 455 697, July 20, 1948.

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A flaw detector for looms consists of an elongated feeler means which is in contact with the cloth as it is wound up on the cloth roll of a loom, and which has been preset to be actuated automatically when the feeler comes in contact with defective portions, e.g. thin places, of the advancing cloth. Upon encountering a defect, the feeler closes an electrical circuit which actuates the loom stop motion.

Improved fabrics. Imperial Chemical Industries Ltd. Indian P. 37 025 (through *J. Sci. Ind. Research (India)*).

Insertion of the "endless weft" in weaving. Lucien Balcan. *L'Industrie Textile 724,* 61-3 (Mar. 1947).

A mechanism is described by means of which yarns from large stationary packages on the right and left of the loom respectively, are carried across by a shuttle-shaped projectile which has no bobbin. The yarn ends from each package are first placed in the shed; the projectile catches one of these and carries it across the loom to form a hair-pin turn around the other yarn end; the yarn is automatically clamped and cut to the required length. On the return trip, the projectile carries the other yarn across to form another loop around this cut end, completing the cycle. The path of the yarns is shown by a series of diagrams, and the clamping and cutting mechanism are described in detail with the aid of diagrams. The projectile and the means by which it catches the yarn is also illustrated.

Instrument for the direct measurement of shuttle speed. I. H. Thomas and J. J. Vincent. *J. Textile Inst. 40,* T45-T56 (Jan. 1949).

An instrument is described which can be fitted into any shuttle to measure its speed. The principle of the instrument, of which the theory is given, is based on the fact that a helical spring, moving longitudinally, with a mass attached to the leading end, will extend if the other end is suddenly stopped. The stopping is effected by impact of the shuttle with a fixed block of lead. The extension of the spring is directly proportional to the shuttle speed and is not appreciably affected by the shape of the shuttle tip or the mass of the shuttle.

Lug strap hanger. Frank Buchanan. USP 2 461 138, Feb. 8, 1949.

This invention provides a lug strap hanger for the picker stick of a loom which extends upwardly behind the picker stick to reinforce the latter, and which is adjustable to increase or diminish the delivery of power for throwing a shuttle operated by the picker stick. The hanger may be securely attached to the picker stick by a single bolt and nut.

Open-mesh fabric selvedge. Thos. M. Scruggs (to Bemis Bros. Bag Co.). USP 2 461 240, Feb. 8, 1949.

This invention provides an open-mesh leno weave fabric comprising spaced double warp strands and spaced filler strands, each filler strand having a free end at a marginal edge of said fabric, said edge having a group of two engaged warp strands extending the length thereof, the free end of each filler strand being bent over longitudinally with respect to said edge and disposed against one side of said group of warp strands, and a coating of adhesive extending the length of said edge and securing said free ends to said group of warp strands.

Pneumatic thread holder for weft replenishing looms. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 460 611, Feb. 1, 1949.

The thread collector is provided with a larger surface area so that there is little or no tendency for the weft ends to accumulate at any one point and clog the air path. An air inlet is also placed so that it helps to disengage a cut weft end from the bundle of weft ends still connected to the untransferred bobbins.

Production of pile fabrics. (Divided out of No. 34 282). Brown Ogden & Co. Ltd. Indian P. 35 935 (through *J. Sci. Ind. Research (India)*).

Shuttle checking device for looms. Zarn. Indian P. 36 858 (through *J. Sci. Ind. Research (India)*).

Shuttle-guiding device in circular looms. Saint Freres. Indian P. 38 983 (through *J. Sci. Ind. Research (India)*).

Shuttles for weaving. McGregor & Balfour Ltd., McGregor & Sparrow. Indian P. 37 110 (through *J. Sci. Ind. Research (India)*).

Weft replenishing pick and pick loom. Walter H. Wakefield (to Crompton & Knowles Loom Works). USP 2 460 318, Feb. 1, 1949.

This invention provides improved weft detecting and bobbin releasing means, including a cam operating on a 2-pick cycle and effective not only to cause bobbin release from the magazine, but

also to provide the necessary time delay between indication of weft exhaustion when first given by the weft detector and the time when the indication can properly be used to initiate a 2-pick sequence culminating in bobbin transfer.

AN INTRODUCTION TO AUTOMATIC WEAVING. G. A. Bennett. Manchester, Harlequin Press Co. Ltd. 1948; 208 p.; Price: 15s.

Having published 2 books fairly recently on the subject of weaving, namely, "A Guide to Young Weavers" and "A Practical Weaving Course," the publishers have now completed this series by bringing out a third book devoted to automatic weaving. . . . The author is fully aware of the importance of warp and weft preparation on the efficiency of automatic weaving and has included several comprehensive chapters dealing with the modern machines and processes available for the high speed production of warp and weft yarns of a quality capable of ensuring the full benefits to be derived from automatization in the weave room itself.—*Textile Recorder.*

Knitting C 3

Cable stitch knitting. Jack Fontaine (32½/100 to Leonard Rapaport). USP 2 461 204, Feb. 8, 1949.

This patent describes a method of knitting on flat type knitting machines having 2 grooved needle-plates and needles with 1 open hook and 1 hook with a closing element and racking means, which comprises making cable stitches by forming a row of stitch-loops on needle hooks of needle-plate No. 1 in an intermediate group between spaced stitch-loops on the opposite plate No. 2, racking 1 needle-plate to position initially more remote stitch-loops and needles of the said intermediate group of needle-plate No. 1 near one of said spaced stitch-loops and needles on the needle-plate No. 2, and sliding the needles across to such needle-plate No. 2 whereby the stitch-loops slide each along its needle into open opposite end hooks of the same needle, racking to bring the remaining stitch-loops and needles of said intermediate group to a position facing the space yet left on needle-plate No. 2 whereby the stitch-loops slide each along its needle into opposite open end hooks of the same needle, then sliding all transferred and interchanged needles and stitch-loops back to their original plate, knitting for several courses, and then repeating the foregoing steps.

Interlock knitting machines. J. B. Lancashire. *Textile Recorder 66*, 59-61 (Feb. 1949).

Features of modern interlock knitting machines, including automatic lubrication, electric stop motions, and quality adjustment devices are described and discussed.

Knitting machine. Vanity Fair Mills, Inc. Indian P. 35 615 (through *J. Sci. Ind. Research (India)*).

Knitting machine. Vanity Fair Mills, Inc. Indian P. 36 511 (through *J. Sci. Ind. Research (India)*).

Knitting machine. Vanity Fair Mills, Inc. Indian P. 37 520 (through *J. Sci. Ind. Research (India)*).

Knitting machine needles. Vanity Fair Mills, Inc. Indian P. 36 128 (through *J. Sci. Ind. Research (India)*).

Knitting machine pattern mechanism. Paul W. Bristow (to Scott & Williams, Inc.). USP 2 460 487, Feb. 1, 1949.

The general object of the present invention is the provision of a pattern mechanism control of special characteristics which involves, in particular, the interruption of advance of the pattern mechanism during the formation of heels of stockings and the retiming of the pattern mechanism in order to insure the proper relationship of the pattern to each stocking knit under its control.

Patterning mechanism. The Bentley Engineering Co., Ltd. Australian P. 131 143, Jan. 25, 1946.

A patterning mechanism for a knitting machine comprises a cyclic patterning device such as 2 chains operable by a racking device and controlling the selection of yarn changing mechanism of the knitting machine through the links which communicate with their chains by means of a collapsible joint in such a way that when the levers do not rest on the surface fixed on the rock shafts the joints collapse and pull the links downwardly and away from the yarn changing mechanism so that they will not control the yarn changing although they may still be operated by the tracks of the chains until the chains reach their starting point and are stopped by a stopping mechanism.

Shaped fabric article. Lajos Bihaly (Trubenised Ltd.). USP 2 460 674, Feb. 1, 1949.

Shaped fabric articles are made of a stretchable knitted fabric, each thread of which is composed of a strand of thermoplastic material and a separate parallel strand of non-thermoplastic material

which are independently shiftable relative to each other before and during the shaping operation. The stretchable fabric is laminated with a fabric of non-thermoplastic material having a factor of stretchability substantially equal to that of the composite knitted fabric. Shaped articles are produced by immersing the fabric in a solvent, placing it in a mold and applying heat and pressure which fuse the composite thread strands at their points of crossing.

Treatment of synthetic fibers and apparatus therefor. Geo. H. Brown & Cyril N. Hoyler (to Radio Corp. of America). USP 2 460 566, Feb. 1, 1949.

The curling of fabrics, composed of synthetic fibers, at the selvedge edges is eliminated by passing the material, upon fabrication, continuously between a pair or pairs of electrodes which are connected to a source of high frequency electrical energy. Because of its dielectric losses, the material is heated to the temperature required for stiffening, and means are adopted for preventing heat so developed from unduly heating the electrodes. The application of slight pressure completes the stiffening process. The method and apparatus enable the operator to maintain a degree of control far superior to any which were obtainable by previous known methods, and waste material is completely eliminated.

Yarn protector. Roy H. Davidson (to Ben Cohn). USP 2 461 724, Feb. 15, 1949.

This invention provides a construction of spool or cone support so arranged that, when a coil or coils of yarn are dropped, the coils fall down upon the surface of the support and fall between pins positioned thereon, so that they cannot move in and wind about the spindle itself. The pins are so arranged that it is a very simple matter, even when some coils are dropped, for the spool to continue to unwind, because of the fact that the coils have not been permitted to fall under the end of the spool or cone, thereby saving considerable time in the operation of the knitting machine, as well as saving yarn, thread, or string.

Special fabrics C 4

Magnetizable materials. The Plessey Co., Ltd. Australian P. 130 815, Feb. 4, 1946.

A process for the production of a magnetizable material comprises precipitating double salt of iron and cobalt and heating in 2 stages to convert it to the double oxide. The double salt, which may be a double exalate, is heated during the first

stage in a closed container at a temperature of between 350°C and 500°C followed by at least 600°C in the second stage. The material may then be mixed with cellulose acetate and formed into a flexible magnetizable strip.

Pile fabrics and machines for producing the same. Wignall. Indian P. 38 919 (through *J. Sci. Ind. Research (India)*).

Process of manufacturing textile materials. Roy Cleeland, Louis J. Kelley & Walter S. Davis. USP 2 459 620, Jan. 18, 1949.

A strip of unvulcanized natural crude rubber is incorporated into the center of a card sliver and the composite sliver is drawn, spun, and woven. The fabric is then cured at 240°F and 2,000-10,000 lbs. per sq. in. for 7-15 min. to produce a material which is highly resistant to wear and which can be cut, by means of dies, for instance, without unravelling.

Weaving changes improve impact resistance. Anon. *Textile World 99*, 155, 274 (Feb. 1949).

In an extract from the Textile Series Report No. 49, "Improvement of Cot Covers," by the Office of the Quartermaster General, results are given which show that additional filling crimp will increase impact durability, whereas a filling breaking strength and fabric tearing strength have no significant effect on the impact resistance of 18 oz. duck as military cot covers. Spun nylon yarn was found to be exceptionally good, but control-crimp cotton was found to be more practical and quite suitable for this purpose.

LCL

Woven, knitted, or braided articles. Imperial Chemical Industries Ltd. Indian P. 36 911 (through *J. Sci. Ind. Research (India)*).

Inspection and testing C 5

Defects in textile fabrics. Foster Pickles. *Textile Recorder 66*, 66-8 (Feb. 1949).

This is a discussion of stains and defects in yarns and fabrics caused by accidents, etc. Practical suggestions for dealing with these faults are given.

Filament denier factor in nylon fabrics. I. D. Vessie. Canadian Industries Ltd. *Textile Mfr. 75*, 76-8 (Feb. 1949).

The behavior of nylon filament under external forces of pulling, bending and twisting is examined by applying the engineering formulas used in stress analysis of beams. Data are presented

on the effect of filament denier on fabric stiffness and opacity, yarn diameter and twist take-up, elongation, and abrasion resistance.

Practical weave room inspection methods. H. E. Wenrich. *Rayon & Syn. Tex. 30,* 51-3 (Feb. 1949).

Suggestions are given for improved weave-room inspection methods.

Fabric applications C 6

Bags for medical purposes and closures therefor. Hakim. Indian P. 37 491 (through *J. Sci. Ind. Research (India)*).

Bearing. O. and S. Bearing Co. Australian P. 131 176, Jan. 10, 1946.

A method of forming a lubricant-impregnated bearing bush comprises impregnating a strip of relatively heavy fabric material with hot lubricant, rolling the strip to form a preshaped bushing which may have a flanged end, maintaining the shape by cooling the lubricant and compressing the bushing to its final shape between members of a bearing. To assist in maintaining the

shape of the preformed bush it may be formed with a backing of a relatively soft sheet metal or a settable gum.

Plastic articles reinforced with filaments, fibers, yarns and fabrics. Imperial Chemical Industries Ltd. Indian P. 37 060 (through *J. Sci. Ind. Research (India)*).

Progress of rayon and Fortisan in surgery. W. Schweisheimer. *Rayon & Syn. Tex. 30,* 68-9 (Feb. 1949).

The use of rayon bandages in surgery is noted briefly, and the features of Fortisan sutures are described.

Surgical dressings. Societe d'Exploitation des Produits des Laboratories Fournier. Indian P. 34 476 (through *J. Sci. Ind. Research (India)*).

STANDARD FINISHING D

Apparatus for steaming textiles. Mathieson Alkali Works. Indian P. 35 081-2 (through *J. Sci. Ind. Research (India)*).

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Apparatus for treating textiles. Hannay & Kilby, Morton Sundour Fabrics Ltd. Indian P. 38 251 (through *J. Sci. Ind. Research (India)*).

Application of infrared radiators in the textile industry. I—Effect on the breaking strength, extension at break, and on the tint of undyed fabrics of wool, cotton, linen and rayon. II—Effect of the Philips I-R Radiator on the properties of various fabrics. H. J. Selling. Vezelinstituut T. N. O. Communication No. 66 1943); *in Dutch.*

Part I—The Philips 250 W. infrared radiator is described and some data on drying strips of fabrics at a distance of 20 cm are given. These strips were compared with strips from the same cloth, dried in air. Dry strips were also exposed to the radiator and compared with the original cloth. No difference was observed in the breaking strength, extension at break, and the whiteness of fabric which had been exposed to the radiator and that which had not. When the fabric strip was moved in a plane perpendicular to the beam, the effect of the radiation was the same in all parts of the strip. Part II—The radiator did not affect the color or strength of dyed fabrics, and can be used to dry dyed or printed fabrics or to accelerate condensation reactions in fabrics impregnated with synthetic resins. This method of drying and heating may prove to be the most economical because the heat is applied directly with very little loss, and the size of the equipment can be reduced. A number of installations in textile plants are planned, and results are to be published.

Continuous bleaching in the United States. Ch. Lauvaural. *L'Industrie Textile 724,* 64-6 (Mar. 1947); *725,* 82-5 (Apr. 1947); *in French.*

This is an account of the continuous peroxide bleaching process. See also TTD: *5,* 292, 368.

Creasing of textile materials and methods for diminishing the creasability, especially of rayon fabrics. M. C. Baylé. Vezelinstituut T. N. O. Communication No. 78; *in Dutch.*

Published information on the measurement of crease resistance, factors affecting crease resistance, and the effect of synthetic resins on crease resistance are reviewed. Methods of determining the amounts of crease-resistant finish in fabrics, determination of the amount of swelling in water and in moist air, and methods of estimating the uniformity of the finish were investigated experimentally.

Double layer pin stenter. E. G. Pullar, John Dalglish & Sons Ltd. *Textile Mfr. 75,* 66-7 (Feb. 1949); *Dyer 101,* 140-1 (Feb. 11, 1949).

Features of the Dalglish double layer pin stenter are described and illustrated. The machine contains all the features of the single layer type, but it occupies approximately half the floor space for the same drying capacity.

Elements of detergency. Georgia Leffingwell. *Rayon & Syn. Tex. 30,* 83-5 (Mar. 1949).

This is a general discussion of the principles of detergency.

Finishing circular knit goods. Irving Teplitz. *Knitter 13,* 34, 37, 38, 40, 42 (Mar. 1949).

In this discussion, the features and operation of the Tube-Tex process for continuous finishing of circular knit goods are particularly noted.

Finishing symbols. C. Norris Rabold. *Textile World 99,* 93, 97 (Jan. 1949).

In cooperation with a board of representatives of the textile industry and the textile machinery manufacturing industry, a list of symbols to represent the wide number of finishing operations and finishing equipment was compiled for general use. Use of these symbols should enable production men, engineers and research men to plan, illustrate, and teach processes under consideration.

LCL

Flax wet spinning frame as a source of catalytic damage in bleaching. Wm. Honeyman, York Street Flax Spinning Co. *Chemistry & Industry* No. 6, 91 (Feb. 5, 1949).

This is an abstract of a lecture presented before the Chemical Society and the Royal Institute of Chemistry in Belfast, Ireland, Jan. 19, 1949. Certain damage occurring during bleaching of linen cloths was traced to the presence of very small quantities of copper in the cloth which further investigation showed was collected on the cloth during wet spinning. During the process, an electric current was set up between 2 dissimilar metals in contact with the solution or water used and some copper was dissolved in the water and eventually was deposited on the cloth. During subsequent bleaching the copper acted as a catalyst and caused damage to the cloth.

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Flux and change keynote tricot-finishing methods. Irving Teplitz. *Textile World 99,* 129, 228, 232 (Mar. 1949).

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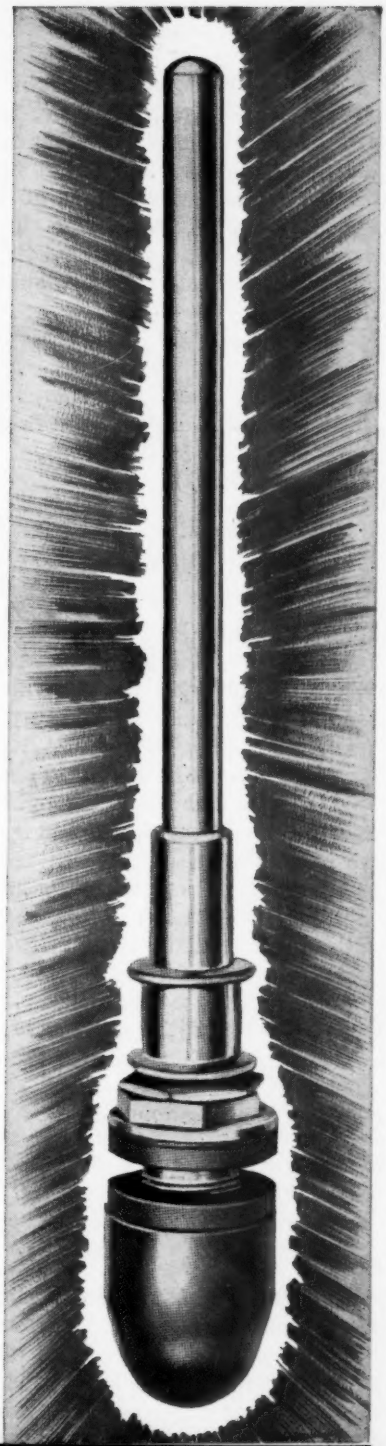

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The trend in finishing of tricot fabrics is toward open-width finishing. Originally, the selvedges of tricot cloth were sown together and the goods processed as tubular cloth but it has now been found that a preferable method of handling and drying is on a pin-tenter frame. The goods are handled as tubular fabrics until they reach the tenter, at which time they are split into a flat fabric.

LCL

Heat treatment of continuous web or length of sheet material. British Artificial Resin Co., Ltd. Indian P. 38 060 (through *J. Sci. Ind. Research (India)*).

High speed tentering machine. A Technical Correspondent. *Textile Recorder 66,* 53-4 (Jan. 1949).

A high-speed tenter is used in connection with the Spooner drying system which operates as follows: A body of air or dry gas is split up into a great number of fine streams which are projected onto the cloth at a high velocity. After hitting the cloth, the air or gas is conducted back to the fan, through a filter, and thence through a heater, and into pressure chambers above and below the cloth. These chambers are fitted with nozzles and the body of air or gas is once more broken up into streams. At temperatures below 212°F, fresh air must be introduced into the circuit. At higher temperatures, no additional fresh air is needed because the moisture from the cloth is raised to a super-heated condition which in itself is a drying medium. The efficiency of the dryer makes possible the use of a shorter, lighter weight tenter, frame than is normally used.

Investigation of the value of substitutes for glycerine in the textile industry. A. C. Van Vreeswijk. Vezelinstituut T. N. O. Communication No. 65 (1943); *in Dutch.*

The substitutes tested were solutions of M_gCl_2, sodium lactate, glycols and similar substances. Sizes were made up and strips of fabric sized with them. The stiffness of the dried fabric was then measured in a torsion meter and a flexometer. The substance appeared to be suitable for sizing, but M_gCl_2 may cause tendering at elevated temperatures, and the lactate may cause a bad odor. For use in printing pastes, only certain organic compounds gave satisfactory results (especially 2-3 butylene glycol) and these sometimes caused difficulties. No substance superior to glycerine for sizing or printing was found.

Method and apparatus for drying sheet materials. Wallace P. Cohoe & Max R. Saslaw (to Frederick H. Levy Co., Inc.). USP 2 459 623, Jan. 18, 1949.

A simple, practicable and commercially applicable method for heating and drying sheets, films, and webs by effectively utilizing an electric field is described. This invention also provides for a more efficient system of utilizing high frequency currents, avoiding losses, and otherwise securing more advantageous utilization of the energy consumed in the operation.

CAC

Method of drying fibrous material. Wayne A. Sisson (to Am. Viscose Corp.). USP 2 459 345, Jan. 18, 1949.

A method is described for drying thin, fibrous articles of indefinite length in which the wet material passes through a substantially closed channel whose walls are maintained at a temperature above the boiling point of the liquid carried by the material. Liquid is evaporated from the material until the moisture content approaches equilibrium with the vapor in the channel, after which the article enters a relatively unheated atmosphere where the accompanying vapor is dissipated. In this manner, rapid drying can be effected without danger of scorching or burning. This method of drying is of special advantage for the drying of articles made of hydrophilic material, such as regenerated cellulose, polyvinyl alcohol and partially saponified cellulose esters.

CAC

New raising machine. Anon. *Textile Recorder 66,* 54-5 (Feb. 1949).

A new raising machine, designed for raising flannelettes, cotton blankets, union shirtings, velours, woolen materials and mixture fabrics, is described. The machine is a 24-roller double-action raising machine which features an entirely new hydraulic system of controlling the pile and counter-pile card rollers.

Principles of textile bleaching. A. J. Hall. *Fibres 9,* 351-4 (Sept. 1948); 443-4 (Nov. 1948); 477-8 (Dec. 1948); *10,* 60-1 (Feb. 1949).

In this series of articles on bleaching, the following topics have been covered: I—Bleaching of cellulose fibers; II—Bleaching of protein fibers, including silk and wool; II—(Cont.)—Bleaching of protein fibers; III—Continuous bleaching for cotton fabrics.

Trends in fabric processing. Francis Tripp. New Bedford (Mass.) Textile Inst. *Textile Bull. 74*, 71-2, 74 (Dec. 1948); *75*, 73-4, 76 (Jan. 1949).

These are the first 2 of a series of articles reviewing fabric processing materials, machinery, and practices, with special emphasis on recent developments in this field. (To be continued).

Trends in knit goods call for better finishing. Leslie L. Walmsley. *Textile World 99*, 116-21 (Jan. 1949).

In a general discussion of finishing methods for knit fabrics, several precautions and operating details are given. The principal difficulty involved is the tendency of knit fabrics to stretch under tension. It has been found possible to scour and dye viscose rayon fabrics in one operation. The fabric is first run in cold water, then scoured with soap, tetrasodium pyrophosphate, pine oil, calgon, and the dyestuff is added after scouring. Drying may be done by a loop dryer or the "Tubetex" process. A third method of drying involves holding the fabric on a wire cage while air is blown through the fabric. The suction drum-type of dryer has also been found useful for this operation. Circular-knit cotton fabrics are kiered for dyeing in pastel shades. Approximately 3% caustic soda and a 4-hour boil are used. In some cases, cotton fabrics are dyed and bleached in one operation by incorporating sodium perborate or sodium peroxide in the dye bath. Circular knit woolen or worsted fabrics have to be handled with extreme care; usually, only light fulling and scouring operations are used. Dimensional stability of these materials has been found obtainable with the "Tubetex" system and the Redman process. Rayon and wool blends are handled in a manner very similar to that for all-wool knit goods. Warp knit goods can be handled either by presetting or not. It is often possible to dye and scour in one operation. The Textile Research Dept. of the Am. Viscose Corp. has developed a process for handling acetate tricot fabric in such a way that it is not necessary to tack it. The fabric is preset in open width and dyed without sewing the selvedges together. This process seems to be very promising. The finishing of nylon tricots is not too satisfactory as the fabric must be preset in an autoclave with steam at approximately 260°F for 10 min. This procedure is unwieldly and another difficulty is the lack of dimensional stability. The Redman process, at present, is too new to be properly evaluated.

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Ultra high frequency apparatus for inspection of sheet and other materials. Chas. L. Liskow (to Sylvania Electric Products, Inc.). USP 2 457 695, Dec. 28, 1948.

A wave guide is used to detect and locate metallic objects, such as broken knitting needles, in fabrics and to automatically stop the fabric, thus preventing injury to pressing rolls, etc. The device may also be used to detect and measure moisture in cloth.

Versatile auxiliary compound. Anon. *Dyer 101,* 81-4 (Jan. 28, 1948).

The properties and uses of ethylene bis-iminodiacetic acid, manufactured by I. G. Farbenindustrie as Trilon B and now manufactured in the U. S. under the name of Sequestrene, are described. Sequestrene finds application in kiering, sizing, printing pastes, dyeing, scouring, stripping, rubberizing, bleaching, rayon manufacture, emulsions, water conditioning, detergents, etc.

Weft-straightening apparatus. John D. Robertson (to Mount Hope Machinery Co.). USP 2 461 084, Feb. 8, 1949.

In weft-straighteners of the pivoted roll type, means are provided for gripping and guiding the edge of cloth and preventing any lateral slippage of the cloth while the pivoted roll is in a tilted position.

DYEING AND PRINTING E

Decoration of glass fabrics. Carl M. Marberg (to Interchemical Corp.). USP 2 450 902, Oct. 12, 1948.

Glass fabrics may be colored successfully to yield dyeings and prints which are wash-fast, drycleaning-fast and substantially free of undesirable added hand, by using compositions comprising pigments dispersed in binders consisting essentially of inter-polymers of vinyl chloride and vinyl acetate, together with a heat-convertible synthetic resin of the carbamide-formaldehyde type. Preferably, the compositions are applied to the glass textile in the form of water-in-lacquer emulsions.

Measurement of color. I—A survey of and opinions concerning the I.C.I. system of color specifications. H. J. Selling; **II.—Fundamentals of spectrophotometric measuring technique.** L. F. C. Friele & H. J. Selling. Vezelinstituut T. N. O. Communication No. 75; *in Dutch.*

Part I—This system of colorimetry is not used at the Vezelinstituut (Government Fiber Research Inst.) but is examined here with the purpose of correlating it with spectrophotometric methods based on the I.C.I. standards, which is preferred by the Vezelinstituut. Part II—The instruments used in color measurement, especially photoelectric photometry, are discussed. The possibilities of combining the spectrometer and the photometer in examining the sample and the condition of lighting and viewing the sample are considered. The Gen. Electric Recording Spectrophotometer and the V. I. spectrophotometer are described.

THE CHEMICAL TECHNOLOGY OF DYEING AND PRINTING. Louis Diserens. (Translated by P. A. Wengraf & H. P. Baumann). Reinhold Publishing Corp., New York, N. Y., 1948; 500 p. Price: $10.

This translation of the well known, highly regarded work of Diserens is a most welcome addition to English technical literature. It includes the first part of the second German edition covering vat, sulfur, Indigosol (soluble vat), insoluble azo, and mordant (chrome) dyestuffs. The translation is easy to read and faithfully records in English the wealth of information contained in this book relating to chemical properties and applications of these important dyestuff classes. In addition, the German edition has been revised to the extent that recent references and pertinent information not available to the author have been inserted. The treatment of vat, soluble vat, and insoluble azo dyes is especially recommended for its thoroughness and splendid organization.—*Chem. Eng. News.*

PHYSICAL ASPECTS OF COLOR. P. J. Bouma. New York, Elsevier Publishing Co., Inc., 1948; 312 p.; Price: $5.50.

Development in the science of color has not always followed a straight line and many of the findings have been formulated in various fields of research, all contributing to a thorough understanding of the subject. In the vast number of books on color, the author of "Physical Aspects of Color" has succeeded in casting the subject matter in such a form as to make it a contribution to the present knowledge of color technicians and also form a guide for the present student in this field. The book is divided into 14 chapters, each of which is a specific phase of color with descriptions of various systems heretofore used in its identification and determination. In addition, there is an appendix of tables, symbols and literature on color

vision, as well as a thorough bibliography. Quite a few books on color have been published during recent months, but this book should take its position as one of the most important contributions to the color technician in the textile and other industries.—*Rayon & Syn. Tex.*

Dyeing

Absorption of the two vat dyes Caledon Red BN and Caledon Jade Green by cotton. A Geake. *J. Textile Inst. 40,* T57-T87 (Jan. 1949).

The paper describes an experimental study of the equilibrium absorption by scoured cotton of Caledon Jade Green (16:17-dimethoxydibenzanthrone) and of Caledon Red BN (1:2-anthraquinone-naphthacridone) from alkaline solutions of their leuco-compounds (vats). Some results are also given on the rate of absorption of the leuco-dyes by cotton from their vats. The chief variables considered are the concentrations of dye and of neutral electrolyte in solutions of constant concentration in sodium hydroxide. The effect of pyridine in diminishing the absorption of the dyes by cellulose is correlated with its effect in raising the redox potential of the system formed by the solution of the leuco-dye in equilibrium with the solid oxidized form. The rate of dyeing, and possibly the equilibrium absorption, are shown to be diminished if, before dyeing, the cotton is soaked in water or dilute aqueous solutions, and not dried prior to dyeing. The special apparatus and technique designed to give maximum accuracy in the measurements are described, and a number of data on the spectral absorptions of solutions of the purified dyes in various solvents are recorded.

Apparatus for coloring fabrics. Dexter. Indian P. 36 234 (through *J. Sci. Ind. Research (India)*).

Automatic temperature control 1 & 2. Leo Walter. *Dyer 101,* 36-7, 39, 41, 43, 45, 46 (Jan. 14, 1949); 156-7, 159, 161, 163, 165, 167 (Feb. 11, 1949).

A detailed discussion is given of the engineering requirements for maintaining automatic temperature control in the dyehouse. Numerous charts and diagrams of layout and equipment are included.

Color and process vital in use of vats on wool. G. T. Hug. *Textile World 99,* 137, 220, 228 (Mar. 1949).

These are 2 satisfactory methods for vat dyeing of wool stuffs: the reduced and the pigment meth-

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ods. In either case it is essential that the temperature not exceed 110°F. In the reduced method, the cloth is wet out and run through the bath containing the caustic soda, hydrosulfite and the dye. The dye-bath is held 30-60 min. at 90°F, 10 min. at 110°F, and 10 min. 110°F. At this point, salt is added and the run continued for 10-20 min. After the dyeing cycle is completed, the caustic soda in the bath is immediately neutralized to soda ash by the addition of sodium bicarbonate. This is essential for the production of bright shades. In the pigment method, the cloth is run in the kettle which contains pigment for about ½ hr. Caustic soda and hydrosulfite are added and the dyeing cycle followed as above. The pigment method is not generally recommended for the use on raw stock and tops. The use of bicarbonate has considerable effect on the dye value of the goods. Unlike vat-dyed cotton, wool does not seem to resist washing. A loss in tinctorial strength during washing may be as high as 50%. By adding bicarbonate to the bath, however, the pH is reduced to sufficient degree to prevent or reduce the solubility of the leuco compound. After washing, the material is given a normal oxidation with sodium perborate. This must be followed by a good washing procedure.

LCL

Color fastness of dyed fabrics and papers. H. J. Selling. Vezelinstituut T. N. O. Communication No. 76; *in Dutch.*

The standards and the methods for determining light-fastness used in several countries, the factors affecting the fading of dyestuffs, the requirements for a suitable apparatus, and the results of comparative fading tests, carried out in sunlight and the modified fugitometer of the Vezelinstituut T. N. O. (Netherlands Government Fiber Research Inst.) are discussed.

Combined dyeing and creping process for organic derivative of cellulose fabrics. Cyril M. Croft & Walter H. Hindle (to Celanese Corp. of Am.). USP 2 460 875, Feb. 8, 1949.

The rate of creping of fabrics containing highly twisted crepe yarns of cellulose acetate, or other organic derivative of cellulose, may be substantially increased if the fabrics are padded with an aqueous organic liquid medium comprising at least 70% by weight of a lower aliphatic alcohol prior to subjecting the fabric to the hot scouring or boil-off bath in which a crepe effect is developed. By subjecting fabrics containing crepe twisted yarns to this pretreatment, the desired

crepe effect is produced in the fabric in the boil-off or scouring bath in an exceedingly short time. Thus, not only may the crepe development be effected in a continuous manner, but the use of crepe promoting agents in the scouring or boil-off bath may be eliminated as well. This novel process may be employed in connection with the production of crepe fabrics dyed in deep, level, uniform shades exhibiting unusual resistance to light, acid fading and washing. These improved dyed crepe fabrics may be obtained if the fabrics containing said highly twisted cellulose acetate or other organic derivative of cellulose crepe yarns are dyed by the mechanical impregnation methods and then developing the crepe in a hot scouring or boil-off bath.

Continuous dyeing textile materials. Dan River Mills, Inc. Indian P. 34 906 (through *J. Sci. Ind. Research (India)*).

Dulling 15-denier nylon hose. Joseph L. Wauters. *Knitter 13,* 50, 51 (Mar. 1949).

The dulling of 15-denier nylon hose by chemical treatment and the use of methacrolate resins is noted briefly.

Dyed cellulose ethers and dyeing of fabrics therewith. Wm. B. Carroll, Jr. (to Dan River Mills, Inc.). USP 2 448 515, Sept. 7, 1948.

A method of dyeing textile material with dyed alkyl cellulose ether, which cellulose ether is originally in finely divided, fibrous form and is dyed by subjecting it in the solid state to the dissolved dyestuffs and developing solutions suitable for dyeing raw stock cotton and thereby producing a dyed cellulose ether in completely developed condition, comprising dissolving said dyed alkyl cellulose ether in an aqueous caustic alkali solution, treating the textile material with this alkali solution, treating the textile material with an acid solution that precipitates the dyed alkyl cellulose ether onto the fibers of the textile material, washing and drying the textile material.

Dyeing highly polymeric linear esters. Imperial Chemical Industries Ltd. Indian P. 37 074 (through *J. Sci. Ind. Research (India)*).

Dyeing of nylon from neutral dye-baths containing magnesium sulfate. Anon. *Tech. Bull (duPont) 5,* 35-7 (Mar. 1949).

The use of magnesium sulfate to improve the absorption of acid dyes from neutral dyebaths was investigated with respect to nylon dyeing. It was found that, for certain acid colors, the property of

high neutral affinity with magnesium sulfate is selective. The recommended dyes are listed. Quantities as low as 2.5% magnesium sulfate crystals ($MgSO_4.7H_2O$), based on the weight of the fiber, exhausted selected acid dyes as well as a dyebath containing 5% acetic acid (28%). Improved exhaustion was obtained by increasing the proportions to 5% and 10%. In dyeing nylon-cotton mixtures, e.g., men's half-hose, good results were obtained using the recommended acid colors and suitable direct colors. Good results were also obtained in dyeing ladies' hose made of 30 denier multi-filament welt and 15 denier mono-filament boot.

Dyeing of Perlon or nylon rayon. Koester. PB L 73632; frames 5272-5305, 1943. *Bibl. Sci. Ind. Reports 6*, 1137 (Sept. 26, 1947); Price: Enlargement print $3.50; *in German.*

Dyeing of textile fibers containing nitrogen. Jas. H. McGregor (to Courtaulds, Ltd.). USP 2 448 448, Aug. 31, 1948.

This invention provides a process of dyeing nitrogenous textile fibers which comprises treating the said fibers with an aqueous solution containing a small quantity of free acid and a compound selected from the group consisting of cyanamide, dicyanamide, melamine, dicyandiamidine, guanidine, biguanide alkyl, hydroxyalkyl and aryl substituted dicyandiamidines, guanidines and biguanidines, and salts of dicyandiamidine, guanidine, biguanide and the alkyl, hydroxyalkyl and aryl-substituted dicyaniamidines, guanidines, and biguanides, and dyeing the thus-treated fibers with a direct cotton dyestuff from a neutral bath.

Dyeing pile fabrics. Imperial Chemical Industries Ltd. Indian P. 37 350 (through *J. Sci. Ind. Research (India)*).

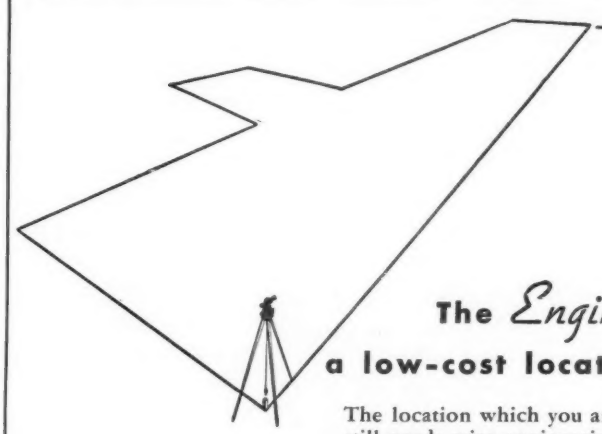
Dyeing silk and mixture hosiery. Anon. *Dyer 101*, 137-8 (Feb. 1949).

In this discussion are included the "split bath" degumming method, the one-bath procedure, uniform shades, and dull-finishing treatments.

Dyeing textile material. Steinen. Indian P. 39 604 (through *J. Sci. Ind. Research (India)*).

Effect of the "Harriset" treatment on the shade of vat dyed wool. Anon. *Tech. Bull. (duPont) 5*, 16-18 (Mar. 1949).

An investigation was undertaken to determine what effect the Harriset method of stabilization



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had on the shade and strength of vat dyed wool. All duPont vat dyes were applied in light and full shades to wool flannel piece goods. Portions of each dyeing were then processed by the Harriset method for improving dimensional stability. With a few exceptions, the vat colors exhibited good fastness to the Harriset treatment. The effect of the treatment on the shade and strength of the individual dyeings is reported in a table.

Effect of the substituents of a number of dyes on their fastness to light. M. le Chanoine Pinte & J. Millet, Centre de Researches de la Soierie et des Industries Textiles. *Bull. de L'Institut Textile,* 29-36 (Feb. 1949); *in French.*

The dyestuffs tested belong to the "Naphthazol" class of insoluble azoic dyes. Cotton cloth was thoroughly scoured and bleached, then tested to make sure there were no cellulose degradation products present. The depth of color chosen for all of the dyes was the "critical tone" which had been found to be of primary importance in light-fastness (J. Pinte, IXth Internatl. Congress of Chemistry, Madrid, 1934). It was found that electronegative groups were found to increase color fastness and electropositive groups decreased it. When the substituent occupies the para position in relation to the azo group, the protective effect is stronger. Light-fastness is also increased by increasing the number of electronegative substituents and decreased by an increase in the number of electropositive substituents.

Limitation of color—Part V—The problem of dye mixtures (cont.). W. D. Wright. *Rayon & Syn. Tex. 30,* 96-7 (Feb. 1949).

This is a continuation of a discussion which began in the Jan. 1949 issue of the efficiency of a dye when used as one of a mixture of 2 or more dyes. (See also TTD: *6,* 54, 139).

Method of continuous dyeing. Wm. M. Wentz (to E. I. duPont de Nemours & Co.). USP 2 460 206, Jan. 25, 1949.

A process of dyeing textile fibers in unwoven form, comprises passing a continuous bundle of said fiber through an impregnation bath, then through a constricted passage whereby to squeeze the fiber bundle to a predetermined moisture retention, and into a developing chamber wherein the impregnated dye liquor is fixed upon the bundle, said impregnation bath, constricted passage and developing chamber being so arranged as to form a liquid-sealed, air-excluding passage for the fiber, whereby the fiber is prevented from exposure to the atmosphere until after it has passed through the fixing stage.

Minutes of a meeting of experts for a discussion on dyeing of polyamide rayon, held at Leverkusen on March 11, 1941. Rúsch. PB L 73632; frames 5226-5234. *Bibl. Sci. Ind. Reports 6,* 1137 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Pressure dyeing. Brit. Intelligence Objectives Subcommittee Report 1806. Price: 6s.

Process of dyeing glass fibers. Hans Roesti (to Ciba Ltd.). USP 2 462 428, Feb. 22, 1949.

A process for dyeing glass fibers is claimed which comprises treating the fibers with the unhardened, soluble product of the reaction of formaldehyde with dicyandiamide, dicyandiamidine, guanidine, or related compounds, and then with a water-soluble organic dye containing at least 1 sulfonic acid group, before the resin hardens. A similar process for vinyl filaments is mentioned in the specification but is not claimed.

Proposed knit goods dye house. Irving Teplitz. *Knitter 13,* 48, 50, 53, 54 (Feb. 1949).

This is a discussion of a proposed knit goods dye house as a plant for dyeing and finishing flat-knit tricot goods. The equipment required for dyeing and finishing Simplex, Raschel, and circular knit goods is also considered. Layout of the dye house, costs, power requirements, equipment, etc. are discussed.

Putting the dye box to use. Irving Teplitz. *Knitter 13,* 44, 46, 48 (Jan. 1949).

This is a review of dye boxes, their uses, specifications, and operating techniques.

Vat dyeing of alkali-sensitive fibers, including an acid reduction of the vat dye impregnated fibers. Geo. K. Plotica (to Allied Chemical & Dye Corp.). USP 2 450 767, Oct. 5, 1948.

This patent states that the penetration, uniformity and fastness to rubbing of the dyeings on tightly woven fabrics, notably woolens and worsteds, are improved by applying the vat dyestuff to the fabric in the unreduced form and carrying out the reduction of the dyestuff to the leuco form in an acid medium, rather than in an alkaline medium. It has been found possible to dye "tippy" wool with indigo in shades having strength, evenness and fastness properties which could not be obtained by dyeing with indigo from an ammoniacal vat. The process is also suitable for coloring organic derivatives of cellulose (e.g., cellulose ace-

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tate) since it avoids alkaline conditions which are detrimental to such materials.

Waste jute floor coverings. Anon. *Dyer 101,* 79-80 (Jan. 28, 1949).

The techniques of dyeing jute waste for use in floor coverings are described briefly.

Printing

Emulsions for use in fabric decorating. Interchemical Corp. Indian P. 38 121 (through *J. Sci. Ind. Research (India)*).

Fabrics with patterned effects. Imperial Chemical Industries Ltd. Indian P. 37 075 (through *J. Sci. Ind. Research (India)*).

Improvements in textile printing. Imperial Chemical Industries Ltd. Indian P. 33 244 (through *J. Sci. Ind. Research (India)*).

Improvements in textile printing. Imperial Chemical Industries Ltd. Indian P. 33 245 (through *J. Sci. Ind. Research (India)*).

The moist paste portion of a fabric is treated with 4:4′-di(benzoyl)-stilbene-2:2′-disulfonic acid and the dyestuffis then applied. (Addition to Indian P. 33 244).

Patterned textile material. Robt. L. Hunter & Ralph D. Cramer (to Celanese Corp. of Am.). USP 2 461 603, Feb. 15, 1949.

Patterned, ornamental fabrics of excellent draping qualities and in which the design is permanently resistant to washing and cleaning are produced by immersing a fabric of yarns of a synthetic linear polyamide condensation product, polymerized vinyl compounds, or cellulose acetate or other organic derivatives of cellulose in a bath containing an organic agent having at least a softening and swelling action on said material, and while the fabric is in a partially swollen condition, passing the fabric between a pair of unheated or cold rolls, one of which is smooth and the other of which is engraved intaglio fashion with the desired design. The fabric becomes locally delustered on the surface at those areas within the borders of the engraved design where obviously the rolls exert little or no pressure on the fabric. A pleasing, permanently patterned fabric is produced by this novel operation which forms on the fabric a delustered design at those areas of relatively little pressure reproducing the engraved intaglio pattern of the roller.

Printing of fabrics comprising aromatic polyesters. Imperial Chemical Industries, Ltd. Indian P. 37 051 & Indian P. 37 052 (through *J. Sci. Ind. Research (India)*).

Printing tables for screen printing of cloth. Mehra. Indian P. 39 846 (through *J. Sci. Ind. Research (India)*).

Process and paste for printing fabrics made of cellulose such as textile fabrics, paper and the like, with chromium mordant dyestuffs. Ernst Tschan (to Durand & Huguenin A. G.). USP 2 456 471, Dec. 14, 1948.

A process is provide for printing cellulosic material with chrome dyestuffs, which comprises printing onto the said cellulosic material a printing paste containing, besides the dyestuff, a thickener, a water-soluble carboxylic acid amide, as chromium mordant an alkali metal chromate, a substance which splits off a strong acid in the heat and, as characteristic additions, a water-soluble salt of an inorganic acid derived from an oxygen compound of sulfur and possessing reducing properties, an aromatic compound capable of performing the reversible reaction quinone ← → hydroquinone, and ω:ω′-dihydroxydiethyl sulfide, and subjecting the obtained prints to drying operation.

Process of screen printing of cloth. Mehra. Indian P. 39 819 (through *J. Sci. Ind. Research (India)*).

Recent improvements in roller printing machinery. Technicus . *Textile Recorder 66,* 62-5 (Jan. 1949).

This review of modern developments in printing machinery includes: chromium plated rollers embossed grooved rubber blankets; modified doctors; pattern registration mechanisms; and examination of goods during printing by stroboscopic light.

Short history of block printing. W. F. Leggett. *Rayon & Syn. Tex. 29,* 93-5 (Dec. 1948); *30,* 84-5 (Jan. 1949); 97-8 (Feb. 1949).

Squeegee supporting and guiding structure. Harry Fleisher & Geo. H. Tillett (to Roto-Matic Screen Printer, Lt.). USP 2 462 376, Feb. 22, 1949.

The screen printing apparatus of this invention includes a central table for supporting a screen frame, and a pair of spools, one carrying a roll of

web to be printed, and the other serving as a take-up roll for the web after printing. The web to be printed is adhesively fixed to a carrier belt which is fed manually intermittently from one spool below the screen to be wound upon the other spool. Provision is also made of marginal spacer strips secured to the carrier belt so that when said belt is wound in spiral condition, the color paste freshly printed upon the web will be kept out of contact with the adjacent layer of said web, whereby smudging of said color will be prevented, and said fresh color will be given a chance to dry. The spacer strips also serve to separate the successive layers of the web and provide between them a drying space through which a stream of dry air may be forced. By winding the printed web in spiral form upon the take-up spools, the material may be stored while drying or curing in the minimum of space as compared to the former methods of drying printed webs on elongated flat tables or suspending said webs in festoons or loops. The compact coiled web-carrying spools of the present invention are movably mounted on caster trucks so as to facilitate the feeding of the web back again through the printing apparatus for applying additional colors or printing the web at different areas from those originally printed.

SPECIAL FINISHING F

Aqueous urea formaldehyde resin for stabilizing textiles. Philip S. Hewett (to Reichhold Chemicals, Inc.). USP 2 456 191, Dec. 14, 1948.

This invention provides a turbid, water-dispersible urea-formaldehyde resin for use in dimensionally stabilizing cellulosic textiles against washing. A process for producing the resin is also claimed.

Cellulose ethers of 3,4 epoxy 1-butene and their oxidation products. David M. Musser (to Pacific Mills). USP 2 455 083, Nov. 30, 1948.

The present invention provides a treatment whereby cellulosic fabrics may be supplied with finishes formed with compounds not chemically reactive with cellulose hydroxyl groups by first producing an unsaturated cellulose derivative containing a double bond, preferably in close proximity to a hydroxyl group, and thereafter treating the cellulose derivative with any of a variety of compounds that react with the derivative at the double bond. A double bond or ethylenic linkage attached to the cellulose molecule in accordance with this invention retains all of its characteristics of chemical reactivity, i.e. is susceptible to oxidation,

halogenation, alkylation, polymerization, cross linkages, additive reactions, etc. Such a double bond derivative may be produced by reacting the cellulosic material with a gaseous or low-boiling-point (i.e. under 300°F) epoxy alkene in the presence of an alkali to form a hydroxy alkylene ether of cellulose, wherein the hydroxyl group is attached to a C atom linked to a double-bond C atom, e.g., to form the 2-hydroxy-$\triangle^3$-butenyl ether of cellulose,

$$Cel{-}O{-}CH_2{-}CHOH{-}CH{=}CH_2$$

and then washing and drying the cellulosic material.

Coating compositions for moisture-proofing by hot melt coating. Martin Salo (to Eastman Kodak Co.). USP 2 458 428, Jan. 4, 1949.

The following composition is eminently suited for melt-coating paper, cloth or other surfaces in molten condition which upon cooling and solidifying gives a high moisture vaporproofing thereto: At least 40% of a cellulose ester containing at least 42% butyryl and at least 50% total acyl, 10-40% di-2-ethyl hexyl phthalate, ½-7% of wax, such as paraffin, and as the blending agent polyvinyl acetate in sufficient amount to render the wax compatible with the plasticized cellulose ester and to impart permanence to this composition.

Fabric coating compositions and fabrics coated therewith. Wingfoot Corp. Indian P. 37 555 (through *J. Sci. Ind. Research (India)*).

Hot melt coating composition containing polyethylene, terpene resin, chlorinated diphenyl resin, and paraffin. Walter C. Steinkraus. USP 2 453 644, Nov. 9, 1948.

Hot melts which may be applied to webs of paper, regenerated cellulose, textile fabric, etc. to provide decorative finishes, to impart water repellency, to serve as laminating agents, etc. are comprised of 20% polyethylene thermoplastic, 12% hydrocarbon thermoplastic terpene resin, 28% chlorinated diphenyl resin, and 40% paraffin.

Imitation of suede leather. Louis Bonnet. *L'Industrie Textile* No. 723, 35-6 (Feb. 1947); *in French.*

A fabric resembling suede is produced from cotton jersey by boiling under pressure, treating with strong caustic soda, then with sodium bicarbonate, drying, and passing through roller coated with emery powder. The fabric is then dyed and dried on a Palmer machine. Finally, it is given a light treatment with emery, and clipped.

Insoluble layers on cellulosic materials: Naamolooze Vennootschap. W. A. Scholten's Chemische Fabricken. Indian P. 35 092 (through *J. Sci. Ind. Research (India)*).

Method of bonding cellulosic materials to rubber and composite products formed therefrom. Johannes G. Weeldenburg (to Am. Enka Corp.). USP 2 458 886, Jan. 11, 1949.

This invention provides vulcanized rubber articles reinforced with cellulosic products, the rubber articles and cellulosic products being bonded together by chemical reaction at their boundary surfaces respectively with a compound of the class consisting of dimethylol derivatives of monosubstituted phenol, mono-methylol derivatives of double substituted phenol and their salts, wherein the aforesaid substituents occupy the so-called reactive positions in the phenol nucleus.

Method of nitrating cellulose lace-backing fabrics. Jos. Datlow. USP 2 461 632, Feb. 15, 1949.

A fabric for backing lace is produced by passing a neutral cellulosic open-mesh fabric through a nitrating bath containing nitric and phosphoric acids for about 0.5 min., exposing to the air for about 4.5 min., and then washing with water and diluted alkali. The fabric so produced has a high tensile strength, but will disintegrate in caustic alkali. It is also resistant to mildew, and is stable during prolonged storage.

Mothproofing composition for fibrous materials. Merk & Co., Inc. Indian P. 37 293 (through *J. Sci. Ind. Research (India)*).

Plasticized polyvinyl acetal resin. Max O. Debacher (to Monsanto Chemical Co.). USP 2 453 569, Nov. 9, 1948.

Improved plasticized polyvinyl acetal resins, which may be used for coating cloth, paper, wood, metal, etc. are made by incorporating blown esters of polyhydric alcohols and poly-unsaturated long-chain fatty acids with the polyvinyl acetal resins.

Process of making cotton textiles water-absorbent and rot-resistant. John D. Reid & Geo. C. Daul (to U. S. of Am.). USP 2 448 153, Aug. 31, 1948.

According to this invention, a cotton textile is soaked with monochloracetic acid and then treated with a solution of an alkali metal hydroxide, such as sodium hydroxide, varying in concentration between 20% to 50%, to give a resulting textile containing 1 carboxymethyl substituent per 40 to

5 glucose units, the higher carboxymethyl substitution going with the higher concentration of NaOH, which is swellable when wetted, and is water absorbent, the degree of swellability and absorbency being controlled by the strength of the hydroxide used and consequent degree of carboxymethyl substitution. The textile can be rendered rot resistant by treating it further with solutions of certain metallic salts in such manner that insoluble metal salts of the carboxymethyl groups present in the textile are formed. A salt which yields copper ions in solution thus to produce the copper salts of the carboxymethyl groups is quite satisfactory. However, other metallic salts, such as those which yield iron, silver, nickel, mercury, lead or aluminum ions, may be employed. Treatment with a metallic salt also affects the manner of swellability.

Protection of mechanical cloth with phenyl mercurials. Peter P. Hopf, Ward, Blenkinsop & Co. (London), & Edw. Race, The University (Leeds). *Ind. Eng. Chemistry 41,* 820-27 (Apr. 1949).

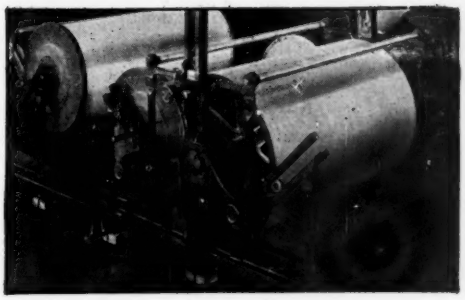
Though phenyl mercurial compounds are fungicidal and bactericidal in low concentrations, their general use in industry has been retarded by their low solubility and the difficulty of obtaining uniform applications of sufficient strength on fabrics and by the risk of dermatitis in handling. Both these difficulties are overcome with the phenyl mercuric salt of 2,2′-dinaphtyl methane-3,3′-disulfonic acid (phenyl mercuric Fixtan). This salt goes readily into colloidal solution and the colloid breaks irreversibly when dried on cloth, permitting a simple treatment to give fast protection to the fabric. The paper reports qualitative and quantitative microbiological tests on cotton and wool which prove the phenyl mercuric Fixtan highly effective (decidelly superior to phenyl mercuric acetate) in protecting both materials from bacterial and fungal attack at various pH values and exposure conditions.

Study in cation-active finishes. Geo. Wiseman, Ciba Co., Inc. *Rayon & Syn. Tex. 30,* 107-9 (Apr. 1949).

This is a discussion of cation-active finishes and their application to textiles. Laboratory tests for the evaluation of cationic strength and the determination of the permanency of cation-treated fabrics to washing and chlorine retention are described.

Surface treatment of fibrous material. N. V. de Bataafsche Petroleum Maatschappij. Australian P. 131 091, Dec. 15, 1945.

Equipped with 2 cylinders for average work . . . or equipped with 3 cylinders and ball-bearing contact rolls to increase drying surface for heavy work. Heavy copper or stainless steel covered 5' and 7' cylinders insulated. Heavy duty self-aligning anti-friction cylinder bearings . . . self-releasing positive drive.



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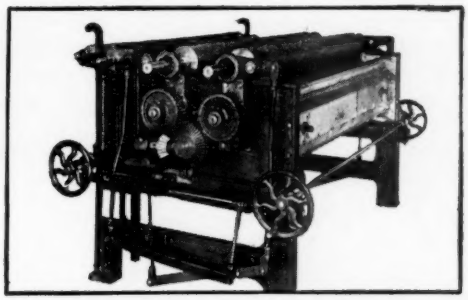

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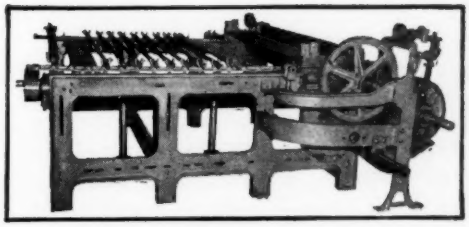

HEAD END, built for single or double beams up to 26", is ball-bearing throughout, either friction or motor driven with variable speed transmission, variable speed single drive, or multi-motor drive. Independent beam wind-up for beams over 26" in diameter.

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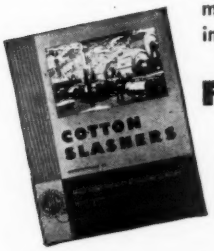

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Fibrous material, particularly that of cellulosic type, is wetted by applying a film of an alcohol, aldehyde, or ketone having the —O— atom directly linked to a single C atom of an 8-11 C atom hydrocarbon radical (or a mixture of such compounds having an average of 8-11 C atoms per molecule), and then applying an aqueous solution of a wetting agent or an anion active detergent. The product of the above process is also claimed.

Textile finishing or gluing agent. Naamlooze Vennootschap W. A. Scholtens Chemische Fabrieken, The Netherlands. Australian P. 131 012, Feb. 4, 1946.

A process of forming a layer, which is insoluble in water, on a carrier, particularly suitable for finishing, gluing and the like characterized by applying on the carrier a solution of a colloid containing free hydroxyl groups, and having the property of swelling or dissolving in water, to which solution have been added a bi- or poly-functional etherifying and/or esterifying agent and contingently, the proportion of alkali necessary or desirable for effecting etherification and/or esterification and drying said solution, preferably while heating the same during or after drying.

Textile treating resins. Milton J. Scott & Stuart H. Rider (to Monsanto Chemical Co.). USP 2 456 568, Dec. 14, 1948.

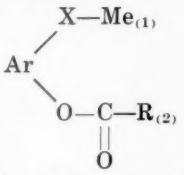
This invention provides thiourea modified ethers of methylol melamine which are stable in storage, and when applied to fibers and fabrics, markedly decrease the chlorine pickup of the treated textiles. The resins also impact creaseproofing and shrinkproofing qualities to the textiles, and do not yellow on ageing. Processes for producing the resins are also claimed.

Treating fibrous materials. J. Bancroft & Sons Co. Australian P. 131 178, Mar. 21, 1946.

A process for imparting flame resisting and mildew resisting properties to cellulosic or the like fibrous materials comprises subjecting them to an aqueous solution of an effective acid and a soluble nitrogen containing organic base or salts thereof, drying the material, heating at a temperature and for a time to effect chemical combination with the material, and then washing and drying the cured material, the pH of the solution being in the range of 2-7.

Treatment of textiles with acyloxy-substituted aromatic acid salts. Carl R. Bellwood (to The Cravenette Co.). USP 2 448 247, Aug. 31, 1948.

Cellulosic and proteinitic fibers, and fabrics made from such fibers, may be made water repellent by a method which consists in subjecting them to the action of an aqueous solution of a compound answering to the formula



where: Ar is a divalent aromatic nucleus selected from the group consisting of C_6H_4 and $C_{10}H_6$; R is a saturated aliphatic chain containing 7 or more C atoms; X is selected from the group consisting of $(-COO)^-$ and $(-SO_2O)^-$; Me is an alkali metal; and groups (1) and (2) are in ortho or para relationship in the benzene compound and in two-three or one-four relationsip in the naphthalene series—the other symbols having their usual technical meaning; and then drying and baking the material being treated. Fibers and fabrics so treated will retain a high degree of water repellency when repeatedly subjected to customary normal washing and dry cleaning.

Unshrinkable wool. A Technical Correspondent. *Textile Recorder 66*, 70-2 (Jan. 1949).

This is a review of work done in the United States on the shrinkproofing of wool.

Waterproofing cellulosic material with higher aliphatic acyl peroxides. Warren B. Warden (to Peter J. Gaylor). USP 2 460 777, Feb. 1, 1949.

This invention provides a method for waterproofing solid cellulosic materials comprising treating said materials with an organic peroxide having an aliphatic acyl group containing 10 to 20 C atoms dissolved in an inert solvent, substantially removing the solvent, and heating the thus treated material at least to the decomposition temperature of the peroxide.

Waterproofing plastic compositions. De Bataafsche Petroleum. Indian P. 32 488 (through *J. Sci. Ind. Research (India)*).

Wrinkle resistance of fabrics. I. J. Gruntfest & D. D. Gagliardi, Rohm & Haas Co. *Ind. Eng. Chemistry 41*, 760-64 (Apr. 1949).

Multifilament fabrics possess wrinkle resistance because motion of the individual fibers relative to each other permits bending with resulting fiber strains only 5-10% of those for a single-

filament yarn. The extent of multifilament character depends on ratio of fiber diameter to fabric thickness, and also on fabric structure, presence of sizing or lubricating agents, smoothness of fiber surface, and fiber stiffness. Since folding produces strains even in multifilament materials, the ability of the fibers to recover from tensile stress is also important. These conclusions were checked experimentally by impregnating a viscose fabric with various urea-formaldehyde resins, with formaldehyde, and with glyoxal. Materials which have access to the inside of the cellulose fibers improved their ability to recover from deformations and increased their stiffness, while resins deposited on the outside of the fibers impaired their multifilament character, stiffened the fabric, and reduced its ability to recover from folding. The diffusible materials which gave effective wrinkleproofing also changed the breaking strength, with resins improving it and formaldehyde and glyoxal impairing it, and all the wrinkleproofing agents degraded the tear strength, abrasion resistance, and flexural endurance.

CLOTHES MOTHS AND HOUSE MOTHS. Their Life History, Habits and Control. E. E. Austen. Assisted by A. W. McKenny Hughes. 3rd edition. Revised by A. W. McKenny Hughes and H. Stringer. (British Museum, Economic Series No. 14). Price 6d.

DIMENSIONAL CHANGES IN CERTAIN COTTON, WOOL, AND RAYON WOVEN FABRICS DURING VARIOUS CLEANING AND PRESSING PROCESSES. Hazel M. Fletcher & M. Virginia Jones. (Circular No. 793, USDA). Washington, U. S. Government Printing Office, 1948. 10¢.

RECOMMENDED REQUIREMENTS FOR FLAMEPROOFING OF TEXTILES, 1941 (Reprint 1948). Boston, Mass., Natl. Fire Protection Assoc. (International). 18 p.; Price: 20¢.

This pamphlet is one of a large number of publications on fire safety issued by the Association. The standards, prepared by the technical committees of the Natl. Fire Protection Association and adopted in the conventions of the Association are intended to prescribe reasonable measures for minimizing fire losses. All interests concerned have opportunity through the Natl. Fire Protection Association to participate in the development of the standards and to secure impartial consideration of matters affecting them.—Foreword.

TROPIC PROOFING. Protection against deterioration due to tropical climates, Dec. 1948. Joint Publication of the Dept. of Sci. & Ind. Research and the Ministry of Supply.

The report briefly outlines the chief causes of deterioration and since mold attack is possibly the commonest cause of deterioration details are given of methods of assessing the effectiveness of anti-mold treatment. The main body of the report deals with materials, grouped under such headings as textiles cordage, paper and packaging materials. Sufficient information is given to indicate the comparative values of different treatments.—*Jute & Canvas Rev.*

TESTING AND MEASUREMENT G

Detergency measurement. Anon. *Chem. Eng. News 27*, 940 (Mar. 28, 1949).

Note: Foster D. Snell, Inc., announces the availability of standard PSC soiled cotton fabric prepared by the group at Pennsylvania State College under the supervision of Pauline Beery Mack. This is a reagent for measurement of detergency. One of the major difficulties with standard soiled fabric in the past has been that the soil becomes more firmly fixed, more difficult to remove, with the passage of time. With this fabric, samples stored in the open air have shown no significant change after 10 years of storage. After soiling, every piece is lightly washed to remove loosely adherent soil and read with the Hunter reflectometer. It must agree with a reflectance of 27% within a tolerance of ±2%. Every tenth swatch is washed in an 8-step washing cycle with neutral soap and soda ash. To be acceptable it must give a soil removal efficiency in terms of brightness regained of 50 ± 2.5% after 5 consecutive washes. The swatches are 5 x 12″, conforming to a standard of the National Bureau of Standards as to desirable size, to permit four fold-overs for reading in the reflectometer. When prepared, the swatches are given consecutive numbers. The unit package for sale consists of 9 consecutively numbered swatches, the 10th numbered swatch of that series having been used for standardization.

Effective laboratory evaluation of textile detergency. E. A. Leonard & A. R. Winch, Alexander Smith & Sons Carpet Co. *Rayon & Syn. Tex. 30*, 79-81 (Jan. 1949); 93-5 (Feb. 1949).

The apparatus and test method used in a laboratory procedure for determining the relative per-

formance of detergent materials when used in a continuous-flow system rather than a batch process. The evaluation is directed particularly toward the continuous scouring of raw wool stock. WPU,jr.

Light-sensitive papers as controls for testing textile colorfastness and stability of materials under arc lamp exposure. Herbert F. Launer. *J. Research Natl. Bur. Standards 41,* 169-77 (Sept. 1948).

A simple method of control of the integrated exposure of the fluctuating arc lamps used in the textile and other industries for testing lightfastness of textile dyeings and stability toward light of materials in general is described. A piece of light-sensitive paper is placed in lamps along with materials to be tested, and the exposure is terminated when a match with a standard, observable with the unaided eye, is obtained. The standard is a strip of the same batch of paper that has been exposed in a master lamp to a definite light dosage. The method is based upon standard light quantities and is thus largely independent of variation between batches of light-sensitive paper. The variations among fading lamps used in the textile industry and the causes, such as differences in lamp models, and line voltage, are discussed. The papers were made in batches of 20 to 30,000 test pieces by dip-dyeing special cotton-rag or wood-fibers papers with aqueous solutions of Niagara Blue G, or with Victoria Blue B in aqueous ethanol. One paper was made by beater-dyeing wood fibers with Niagara Blue G to give a nonleaching paper and was sized with melamine resin to impart high wet strength, making the paper suitable for lamps with water spray. Other paper-dye combinations were studied. Data are presented indicating the visual sensitivity of the various types of papers from 1 to 100 hrs. of usual arc exposure, the permanence of the papers during storage in the dark, the uniformity throughout each batch, and the effect of nonuniformity, temperature effect, lasting qualities of the standard strips during use, correlation with textile dyeings and the effect of intermittent exposure. The master lamp used for standardizing the papers, its accessories, and resproducibility of input power and radiant output are discussed.

Observations on textile standardization in Europe. Wm. D. Appel, Natl. Bur. Standards. *ASTM Bull.* No. 156, 29-30 (Jan. 1949).

Textile research institutions in England, Iceland, Holland, Sweden, and Norway are noted briefly,

particularly with reference to their activities in standardization and research.

Report on ISO conference on textiles. H. J. Ball, G. S. Buck, J. B. Goldberg & A. G. Scroggie. *ASTM Bull.* No. 156, 18-19, 26-9 (Jan. 1949).

This is a description of the International Standards Organization and an account of the general proceedings and events prior to the meeting of the ISO, Technical Committee 38 on Textiles (held at Buxton, England, June 7-12, 1948). Also included are the discussions that took place with reference to various aspects of the testing of fabrics. The several sections of this report were prepared by the authors as participants in the conference and as a report to the ASTM Committee D-13 on Textiles at its meeting on Oct. 14, Washington, D. C.

Tentative immersion absorption test for cotton sewing thread. Anon. *Tech. Bull. (DuPont) 5,* 41-3 (Mar. 1949).

The need for a waterproof sewing thread for use in manufacturing rainwear led to an investigation of means for measuring the water-resistant characteristics of a thread. A modification of the standard AATCC Immersion Absorption Test for Fabrics was developed, but has not been highly standardized. Details of the modified test, the equipment used, and procedures followed are given.

Instruments and instrumentation G 2

Control for recording platen in tensile testing machines. David C. Scott (to Henry L. Scott Co.). USP 2 442 150, May 25, 1948.

In the use of the Scott tester (USP 2 205 579, June 25, 1940) when the beam swings through a relative large angular arc, a slight variation may occur in the movement of the platen, on which the behavior of the specimen is recorded, relative to the beam. This invention provides an arrangement which moves the platen equal amounts relative to the beam for each angular movement of the beam about its pivot.

Critical study of the methods of determining the breaking strength of fibers, yarns, and fabrics. W. H. Westenberg. Vezelinstituut T. N. O. Communication No. 79 (May 1946); *in Dutch.*

This is a survey of the preliminary work involved in drafting tentative standards for the testing of textile materials. The various methods of load-

ing, the effect of temperature, humidity, and the length of the sample are reviewed.

Device for measuring the outside depth of threads. Carl Lombardine. Ger. patent application L 112 977 IXb/42b, Nov. 2, 1943. PB L 70075; frames 2474-2477. *Bibl. Sci. Ind. Reports 6,* 1164 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Draft Indian standard for shrinkage test. Anon. *J. Sci. Ind. Research (India) 7,* 504 (Nov. 1948).

Note: The Indian Standards Institution announces the compilation of its first draft standard for textiles, entitled 'Draft Indian Standard for Method of Test for Shrinkage of Woven Cotton Cloth in Laundering". The object of the test specified in this draft is to provide an agreed method of estimating shrinkage on laundering of woven cotton cloth, in order that the manufacturers may be able to make due allowances in every type of fabric produced by them. The draft, based on the corresponding specifications issued by the American Society for Testing Materials, describes the scope of the test, the apparatus to be used, preparation of test samples and method of conducting the test.

Effect of light, oxygen and heat on Roselle yarn. A. C. van Vreeswijk, Vezelinstituut T. N. O. Communication No. 68 (1943); *in Dutch.*

Yarn made from Roselle *(hibiscus subdariffa)* showed a lower loss of strength on heating than did Indian and Java jute yarns. Against light tendering in a fugitometer, the Roselle yarns did not show less resistance than Indian jute, likewise, prolonged exposure to daylight did not show any difference. The presence of batching oil had no perceptible effect on the strength.

Estimation of the quality of yarns. J. Thilliez, *L'Industrie Textile 724,* 54-5 (Feb. 1947).

Various methods are used to evaluate the regularity of yarns. Most of them make use of 2 values: the average strength and the sub-average strength. The sub-average strength is calculated by averaging all of the values which are below the average. The 3 best known methods of using these values to calculate regularity are outlined and it is concluded that they do not give satisfactory results. Three other methods are given which are claimed to give better results.

Extensometer for textile threads. Licentia, Patentverwaltungs G.m.b.H. Ger. patent application L 104 372 IX/42k, May 23, 1941. PB L 70075; frames 2393-2396. *Bibl. Sci. Ind. Reports 6,* 1137 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Fluidity measurements of solutions of cellulose in cuprammonium hydroxide. Application of the test on the textile, paper and laundry industries. A. C. Van Vreeswijk. Rijksvoorlichtingdienst (Now the Vezelinstituut T. N. O.) Delft, Netherlands, Communication No. 59 (1941); *in Dutch.*

The test, as conducted at the Vezelinstituut T. N. O., is described in detail.

Identification of casein fiber in pure condition and in blends. A. D. J. Meeuse, Vezelinstituut T. N. O. Communication No. 73 (1944); *in Dutch.*

Published methods of identification are reviewed, classified, and tested critically. Most of them appeared to be non-specific or of no value. For practical purposes, 2 chemical tests are recommended: (1) The material is immersed in concentrated HCl mixed with an equal volume of water and the mixture heated to boiling. The casein fibers become reddish-purple to violet, and lose the color on rinsing with water. (2) The material is placed in a stoppered flask with an excess of *cuoxam* (cuprommonia), the flask shaken for 5 min., and the material then rinsed with dilute NH_4OH. Casein fibers stain deep blue; others fibers remain unstained or faintly stained, or dissolve. Both methods are suitable for fiber mixtures. Million's reagent may be used to distinguish the animal fibers. Microscopic methods of examining fibers are also described.

Improved permanent mounting medium for textile fibers. H. H. Broadfoot & E. R. Schwarz, Mass. Inst. of Tech. *Textile Research J. 18,* 756-8 (Dec. 1948).

A method is described for the permanent mounting of textile fibers using as a medium the combination of a synthetic resin of moderately low refractive index with a compatible plasticizer of a much higher index. By varying the composition of the mixture, the refractive index may be adjusted to a value more suitable for a particular fiber.

Method for the electron microscopy of wool. Max Swerdlow & Gloria S. Seeman. *J. Research Natl. Bur. Standards 41,* 231-45 (Sept. 1948).
See TTD: *6,* 75.

Moisture determination in textiles by electrical meters. Part II. Richard K. Toner, Carol F. Bowen & John C. Whitwell. *Textile Research J. 19,* 1-8 (Jan. 1949).

Additional experiments on 2 moisture meters (the Hart Moisture Meter and the Steinlite Moisture Meter) are reported. These new experiments were undertaken to illustrate the effects of temperature, dye, salt content, and fiber variation and are useful in estimating the order of magnitude of an effect. (For Part I see TTD: *6,* 76).

New method of sectioning synthetic fibers with the ultra-microtome for examination with the electron microscope. Marshall D. Earle & Jean A. Minkin, Franklin Inst. *Textile Research J. 19,* 36-41 (Jan. 1949).

Rayon or nylon yarn, consisting of 10 or 20 single filaments, is prepared for sectioning with the high-speed ultra-microtome so that the boundaries of individual filaments can be identified when viewed in the electron microscope. A special holder is provided for the yarn in which the filaments are spread out radially; they are then coated with a film of evaporated gold in the vacuum unit. These filaments are allowed to fall parallel to each other again and are embedded in a very thin layer of low-melting-point paraffin and sectioned with the ultra-microtome. The thin film of gold makes it possible to determine whether the area being studied is near the surface of the filament.

Quantitative determination of cottonized flax in mixtures with rayon or spun rayon. J. P. den Herder. Vezelinstituut T. N. O. Communication No. 69 (1943); *in Dutch.*

After a critical examination of the acid hydrolysis, the calcium thiocyanate, the zincate, the cold sodium hydroxide, the zinc chloride procedures, Schwertassek's method, and Marshall's formic acid method, the author concludes that the Viertel modification of Marshall's method gives the best results. The material is separated into fibers and treated with a mixture of 85 parts formic acid and 15 parts $CaCl_2$ to dissolve the rayon. The mixture is filtered through glass and washed first with the reagent, then with water and with alcohol, and dried. Microscopic examination of the residue is necessary to make sure that all of the rayon dissolved. A blank must be run on the cottonized flax to obtain a correlation factor for flax dissolved by the reagent. This procedure cannot be used for blends containing certain high-polymer rayons or spun rayons such as Lunusa and Cuprama.

Method and machine for gaging threads. Fritz Werner A. G. Ger. Patent Office File No. P. A. 342 862, May 12, 1942. PB L 70075; frames 2937-2938. *Bibl. Sci. Ind. Reports 6,* 1167 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

New Universal wear tester for textiles. Anon. *Rayon & Syn. Tex. 30,* 53-4 (Feb. 1949).

This is an account of the development of the Stoll-Quartermaster Universal Wear Tester, developed in the Quartermaster Textile Materials Engineering Laboratory for use in textile research and for related purposes in Quartermaster procurement of textiles. The new tester can be used for: (1) flat-abrasion testing, (2) edge-abrasion testing; and (3) flexing. The device is illustrated by photographs and diagrams and its operation is briefly described.

Stiffness and bending strength tester for thin sheet materials. Russell D. DeWaard, Chas. R. Stryker & Albert F. Blockman (to Am. Cyanamid Co.). USP 2 462 826, Feb. 22, 1949.

This patent describes a testing machine which determines in terms of gravitational units the force needed to bend or flex materials in the form of thin strips. The machine may be used for fabrics. The tester has the advantage of not using calibrated springs and has a compensation for the weight of the specimen being tested.

HAM

Study of ASTM tentative stiffness test as applied to rubber. D. G. Stechert. *ASTM Bull. 157,* 61-5 (Mar. 1939).

The author shows that the ordinary form of stiffness tester, using the cantilever beam principle and large deflections, does not provide a fundamental measure of the elasticity of rubber, since the test does not distinguish between elastic and plastic properties.

HAM

Technique for making transverse sections for fibers. M. F. E. Nicolai. Vezelinstituut T. N. O., Communication No. 70, I, II, and III (1944); IV and V (1945); *in Dutch.*

This is a critical survey of all methods of making fiber sections mentioned in the literature, in which the recommended procedures are summarized. The paper is illustrated with many photographs and diagrams.

Tensile strength tester. Anon. *Chem. Eng. News 27,* 942 (Mar. 28, 1949).

Note: A tensile tester based on electronic principles claimed to make possible the accurate load-elongation measurements of plastic and textile materials, wire, paper, rubber, adhesives, and similar specimens is being produced by the Instron Engineering Corp. Full scale load range of the unit extends from 2 grams up to 5,000 lb., in some models, and a choice of jaw speeds is incorporated ranging from 0.02 to 20 inches per minute. By virtue of the flexibility of the controls, both for changing the sensitivity of the load recording system and for operating the motion of the pulling jaw, a variety of unique testing techniques is available for the determination of special properties, as well as for routine measurements, the company states.

Textile instruments. VIII—Testing fastness to light—2. IX—The measurement of twist. R. W. Moncrieff. *Fibres 9*, 430-2 (Nov. 1948); *10*, 16-20 (Jan. 1949).

Part VIII-2 is a discussion of the Fugitometer and the Fade-Ometer. Part IX is a discussion of twists, uniformity of twist, doubled yarns, core yarns, measurement of twist, and the design and operation of a number of twist testers. (TTD: *6*, 153).

ACCELERATED LIGHT FADING EQUIPMENT IN I. G. Brit. Intelligence Objectives Sub-committee Report 1818. Price: 1s.6d.

LE LABORATOIRE TEXTILE (Booklet). Fredrick Maillard, Conservatoire National des Arts et Metiers. Paris, Editions de l'Industrie Textile. 185 f.

The function, equipment, and methods used in textile control laboratories are described and illustrated. Reviewed in *L'Industrie Textile 724*, 53 (Mar. 1947).

TEXTILE MILLS H

Air conditioning and its relation to the modern mill. G. L. Wiggs & L. C. A. Walford. *Textile Mfr. 75*, 83-6 (Feb. 1949).
See TTD: *6*, 153.

Australia's textile industry. H. Bowden Fletcher. *Textile Recorder 66*, 50-3 (Feb. 1949).

This is a review of Australia's textile industry and includes comments on the woolen, rayon, and cotton operations. Considerable expansion of the industry is underway, despite shortages of new machinery and labor.

Automatic control, recording and indicating instruments. Anon. *Rayon & Syn. Tex. 30*, 91-3 (Mar. 1949).

The use of automatic controls in size cooking and size storage, slasher operation, bleaching, mercerizing, dyeing, and motor operation are described briefly.

Cost reduction through quality improvement. R. F. Hurst, Bigelow-Sanford Carpet Co. *Factory Management & Maintenance 107*, 56-7 (Apr. 1949).

A successful campaign is underway at Bigelow-Sanford to reduce costs through quality improvement. A goal of 50% reduction in imperfects plus specified quality improvements was set up and announced to supervisors and employees. This step was followed by meetings of supervisors, contests and awards for suggestions from supervisors and employees, and a general educational campaign to spotlight the value of quality improvement.

Controlled humidification and air-conditioning important in textile manufacturing. Anon. *Rayon & Syn. Tex. 30*, 99-101 (Feb. 1949).

This is a discussion of the basic principles of humidification and air conditioning and their importance in textile manufacturing.

Cuba enters rayon production industry. S. M. Freundel. *Rayon & Syn. Tex. 30*, 57-61 (Mar. 1949).

This is an account of the Copania Rayonera Cubana (Cuban Rayon Co.) and its new viscose rayon plant at Matanzas, Cuba. Features of the plant and processes are discussed.

Development of textile equipment during the past 10 years. F. Maillard, Conservatoire Natl. des Arts-et-Metier, at a conference held at the Inst. Textile de France. Dec. 16, 1947. *Bull. de L'Institut Textile* 9-27 (Feb. 1949); *in French.*

It is concluded that the most important progress in spinning machinery was made in the jute industry, where the cost of producing yarn has been reduced by the use of softening and spreading machines, triple-thread screw drawing frames, and spinning frames with draw-band feed. In preparing yarn for weaving, automatic winders give economical production of a high quality. The Fayolle-Ancet and the Ratatiss circular looms have a promising future, with direct competition from shuttleless looms only. Warp knitting ma-

chines of the F. N. F. type are also regarded as an important development.

Diesel power units for the textile industry. Anon. *Textile Recorder 66,* 69-70 (Feb. 1949).

This is a discussion of the application of diesel power units to textile operations and the advantages offered.

Economic importance of the electric boiler. Anon. *The Eng. J. (Canada) 32,* 133 (Mar. 1949).

In this discussion of the Swiss practice of using electric steam boilers to equalize demand for electric power, a Swiss textile factory installation is cited. The plant employs 2 electric hot-water accumulators, integrated with both fuel and electric boiler types, to store up to 12,000 kwh of energy during off-peak periods.

Electrical progress in the textile industry. F. D. Snyder, Westinghouse Electric Corp. *Rayon & Syn. Tex. 29.* 62-4 (Oct. 1948); 68-70 (Nov. 1948); 102-3 (Dec. 1948); *30.* 92-3 (Jan. 1949); 70 (Feb. 1949).

See TTD: *6,* 156.

Electrostatic air cleaning in the textile industry. R. L. Lincoln & T. J. Atkins. *Rayon & Syn. Tex. 30,* 94-5 (Mar. 1949).

This article points out the need for clean air in textile mills. The electrostatic precipitation method is especially suited to the removal of very fine particles from the air. The importance of cleaning the air being circulated within the mill, as well as that taken into the mill from the outside, is emphasized.

HAM

History of the electric spinning motor. C. L. Hamm, Gen. Elec. Co. *Rayon & Syn. Tex. 30,* 79-81 (Apr. 1949).

This is an account of the development of the highly specialized rayon spinning motors of today.

Improved power transmission lowers textile costs. Anon. *Rayon & Syn. Tex. 30,* 117-9 (Apr. 1949).

This discussion of power transmission is centered around the type of motors and belting available and the advantages they offer in textile operations.

Machinery development in the textile industry. J. T. Reinholds. *Tids. Textilteknik 7,* 3-7 (Jan. 1949); *in Swedish.*

This is a summary of developments in textile machinery for spinning, weaving, hosiery manufacture, and finishing. The manufacture of certain textile machinery which has recently been started in Sweden is also noted.

Mechanical handling in textile factories. G. T. Moore. *Textile Recorder 66,* 66-9 (Jan. 1949).

See TTD: *6,* 79.

Modern plant buildings for lower unit cost: Am. Enka Corp. Anon. *Factory Management & Maintenance 107,* B64-B66 (Apr. 1949).

This article, one of a group on modern plant construction, describes the new rayon tire cord plant of American Enka at Lowland, Tenn. To provide for expansion, permanent facilities (railroad siding, etc.) were concentrated at one side of the plant. For the same reason, aluminum siding was used for temporary walls. The steel-framed buildings, of irregular functional shapes, employ sawtooth roofs extensively. Other plant features, including corrosion-resistant paint, precast concrete slab roofs, extensive air conditioning, water supply and waste disposal equipment, steam power plant and materials handling equipment, etc., are briefly described in the article. Companion descriptions of new plant buildings in other than textile fields provide illustrations of modern construction trends.

Problem of dust in the cotton industry. D. W. Hill, Brit. Cotton Industry Res. Assn. *Textile Recorder 66,* 59-61 (Jan. 1949).

The problem of dust is discussed with particular reference to the cardroom where the problem is more acute. No satisfactory solution has yet been found; existing methods of attempted control are discussed, and the work of the Shirley Institute on the problem is noted briefly.

Tractor halves cost of handling operation at U. S. Rubber Winnsboro plant. Anon. Textile *Bull. 75,* 78, 80 (Jan. 1949).

The use of an electric tractor to haul roving trucks from the spinning frames to the warping room and back again has more than doubled the load which can be handled per trip and thus has cut in half the number of trips which must be made.

A COMPREHENSIVE DICTIONARY OF TEXTILE TERMS. Alfred Higgins & Rudolph L. LaVault. Fall River, Mass., Dover Press, 1948. Price: $3.50.

The need for a comprehensive dictionary of textile terms was never more apparent than at this time. In these days of new fibers and fabrics and new terminology, a clarification of the old terms

as well as the newer ones is most timely. The work of Mr. Higgins and Mr. LaVault will prove of value not only to those now in the textile industry but also to the many young men and women now in textile schools. The authors have well demonstrated their years of experience and their willingness to pass on to others the knowledge they have acquired. —Foreword (through *Textile Bull.*).

COTTON WEAVING FACTORIES. Agreement concerning fencing of machinery, first aid and other safeguards. With appendices. British Ministry of Labor and National Service. (36-174). Price: 6d.

I. L. O. TEXTILES COMMITTEE REPORTS. Geneva, International Labor Office, 1948. These 3 reports of the second session of the textiles committee held in Geneva in 1948 are (1) General Report, (II) Employment Problems—with special reference to recruitment and training, and (III) Industrial Relations; price 4s 6d., 3s. 9d and 2s 6d. respectively. They are obtainable from the International Labor Office, 38-39 Parliament St., London, S. W. I.

In Report I, the first chapter gives a brief account of the measures taken by the governing body and the office to give effect to the conclusions reached by the first session of the Textiles Committee, and also reviews the action taken in the various countries in the light of these conclusions. Chapter II describes the steps taken by the Office to follow up the studies and enquiries proposed by the Committee and contains, in particular, brief studies on welfare facilities, safety, and health of workers in the textile industry. Chapter III reviews some of the important trends and developments in the textile industry, and Chapter IV is devoted to a study of its changing international distribution. Report II surveys the textile manpower situation and attempts to analyze the main trends and developments since pre-war days. In addition, it sets out information concerning the manpower requirements of the textile industry and discusses the measures taken in various countries to increase available resources. One chapter is devoted to vocational training, while the final chapter enumerates points which might give rise to an exchange of views between governments and employers' and workers' organizations. Divided into 3 chapters, Report III gives a brief historical account of the efforts made by the I. L. O. in the broad field of industrial relations, surveys the present state of industrial relations in the textile industry, and suggests some conclusions arising out of the survey.—*Textile Recorder.*

THE JOINT SAFETY PROGRAM OF THE FORSTMANN WOOLEN CO. AND LOCAL 656, TEXTILE WORKERS UNION OF AMERICA—CIO. New Brunswick, N. J., Institute of Management & Labor Relations, Rutgers University, 1948.

This is a detailed report of the safety program that resulted in the Forstmann plant at Passaic, N. J., being designated "the nation's safest textile plant."

OUR FIRST FIFTY YEARS, 1897-1947. A presentation of Joanna-Western Mills Co., Chicago, 1947; 68 p.

This is a book published in commemoration of the 50th anniversary of the Joanna-Western Mills Co. The history of the development of the company, its products and policies are given.

TEXTLIES BY BRITAIN. Grace Lovat Fraser. New York, The MacMillan Co., 1948; 182 p.; Price: $1.65.

This single volume has sketched a comprehensive account of history connected with the ancient and modern British textile industry. The industrial, economic, and political events of textiles and textile fibers and fabrics have been followed through for over a thousand years. In another section of the book is given a complete description of the sources of silk, wool, cotton, flax, rayon and synthetic fibers, and the book provides reading of a useful nature to those who are without condensed knowledge of this character. The book has a special appeal to those engaged in the creative phase of the industry, and its value is enhanced by 52 plates, most of them in color, of contemporary or historical fabric design. The usefulness of the book is apparent and makes it worthy to be on the shelf of every textile processor and distributor. It is complete with bibliography of historical and textile literature which in itself is a valuable source for original material. Manufacturers, wholesalers, executives, designers and students who make, handle, or use textiles should welcome a book or reference which saves their time by providing convenient, accurate knowledge.—*Rayon & Syn. Tex.*

CHEMISTRY AND PHYSICS OF TEXTILE MATERIALS I

Aqueous zein dispersions. C. W. Ofelt & Cyril D. E. Evans, Northern Regional Research Laboratory, USDA. *Ind. Eng. Chemistry 41*, 830-33 (Apr. 1949).

The data reported in this paper on zein dispersions are of possible interest in connection with the use of zein for protein fibers. Zein is dispersible in strong alkali metal hydroxide solutions only in the narrow pH range of 11.3-12.7. Quaternary ammonium hydroxises are also dispersing agents, though inferior to sodium and postassium hydroxides, while calcium and ammonium hydroxide solutions do not disperse zein. The amount of alkali required is low: sodium hydroxide from 1.4% to 6.4% of the weight of zein will give a 10% dispersion. The dispersibility of zein is attributed to salt formation by the tyrosine hydroxyl groups. Strong acids also disperse zein. Viscosity-time curves for various pH values, reported in the paper, show stable dispersions below a critical range of pH 11.4-11.6.

Behavior of polyamides at elevated temperature.

R. Brill. PB L 73632; frames 5150-5175, 1941. *Bibl. Sci. Ind. Reports 6,* 1137 (Sept. 26, 1947); Price: Enlargement print $3.00; *in German.*

Cellulose, glycogen, and starch. T. J. Schoch. *J. Chem. Education 25,* 626-31 (Nov. 1948).

This is an elementary discussion of the structure and some of the properties of polysaccharides of higher molecular weight. The structure of cellulose, and cellulosic fibers, including rayon fibers, are among the subjects discussed.

Discussion on polyamides. Kleine & Greune. Minutes of the meeting. PB L 73632; frames 5176-5199, 1940. *Bibl. Sci. Ind. Reports 6,* 1137 (Sept. 26, 1947); Price: Enlargement print $2.50; *in German.*

Discussion on polyamides. Hubert. (Minutes of a meeting.) PB L 73632; frames 5211-5225, 1939. *Bibl. Sci. Ind. Reports 6,* 1137 (Sept. 26, 1947); Price: Enlargement print $1.50; *in German.*

Effect of variations in degree of structural order on some physical properties of cellulose and cellulose acetate yarns. R. W. Work, Celanese Corp. of Am. *Rayon & Syn. Tex. 30,* 70 (Apr. 1949).

The author discusses the use of x-ray diffraction patterns in determining the degree of crystallinity and orientation in textile materials and suggests that, out of such basic research on the structural order of textiles, will come new and improved textiles.

HAM

Heat softening of cellulose acetate. Gregory M. Moelter & Ernst Schweizer, Celanese Corp. of Am. *Ind. Eng. Chemistry 41,* 684-89 (Apr. 1949).

A method determining softening points of films by creep measurements was developed and found to give results reproducible within 1°C. Curves of softening temperature versus plasticizer content were then run for various plasticized cellulose acetate films. The more active plasticizers gave the lower softening points, and, for a homologous series, a correlation with moll fraction plasticizer could be secured. An empirical equation could be fitted to the curves for a given series, and the retentivity of the plasticizer for the cellulose acetate could be judged from the plasticizer content at which the data deviated from the plots. The softening point method, depending on extrapolation to zero of a curve of compliance (ratio of strain to stress) versus temperature, should be readily applied to fibers, though the data and correlations, referring to plasticized acetates, are of limited value in the textile field.

High-polymer experiment for physical chemistry. K. Van Holde & R. A. Alberty. *J. Chem. Education 26,* 151-53 (Mar. 1949).

An experiment is described which enables students of elementary physical chemistry, or persons interested in such things as artificial fiber research, to carry out one of the standard techniques of high polymer molecular weight determination and provides an introduction to the physical chemistry of macromolecular substances. The effect of the solvent on the configuration of large molecules in solution can be demonstrated quantitatively. The equipment required is an Ostwald viscometer, stopwatch, and thermostat.

Interaction of various organic liquids with cellulose acetate fibers as detected by specific gravity measurements. Fred Fortess, Celanese Corp. of Am. *Textile Research J. 19,* 23-35 (Jan. 1949).

The rate and extent of penetration of a large variety of pure liquids into cellulose acetate yarn were studied by the pycnometer liquid displacement method of determining specific gravity. Liquids used were of the homologous series of aromatic and aliphatic alcohols, aldehydes, ketones, ethers, esters, halogens, nitriles, phthalate esters, nitro-compounds, and hydrocarbons. The maximum apparent sq. gr. obtained for a Celanese yarn were found to be a function of the polar

groups on the molecules of the liquid medium, as well as of their size and shape. Values obtained ranged from 1.306 to 20°C with carbon tetrachloride to 1.415 with *n*-heptaldehyde. It is suggested that a hydrogen-bonding mechanism explains the manner by which the molecules of the liquid medium penetrate and solvate the yarn. The data obtained may be of value in selecting the medium for heterogeneous reactions involving the impregnation of cellulose acetate fibers or fabrics, where penetration of dyes, flameproofing agents, cross-linking compounds, etc., below the surface is desired.

Investigation of the relationship between polymer structure and mechanical properties. Part III: A thermodynamic and optical analysis of the behavior of polyethylene, polyvinyl chloride, and lactoprene. Richard S. Stein, Saml. Krimm & Arthur V. Tobolsky. *Textile Research J. 19,* 8-22 (Jan. 1949).

Stress and birefringence properties of polyethylene, polyvinyl chloride, and lactoprene were examined and interpreted in terms of molecular processes involved. Thermodynamic analysis of the stress of polyethylene and polyvinyl chloride in terms of entropy and energy contributions appeared to substantiate the conclusions drawn from the stress and birefringence measurements. Stress and birefringence properties of lactoprene were shown to change with changes in temperature in the neighborhood of the second-order transition point, which can be interpreted in terms of a change in the mechanism of deformation accompanying reversible changes in chain configuration. (For Parts I & II see TTD: *5*, 460-1).

Olein. Rolf Leonardsen. *Tids. Textilteknik 7*, 14-6 (Jan. 1949); *in Swedish.*

This is a detailed account of the requirements as to quality which must be satisfied by olein, the important agent used for wool oiling.

Potentiometric titration of viscose. P. Herrent & G. Jnoff, Union des Fabriques Belges de Textile Artificiels. *J. Polymer Sci. 3,* 487-99; 834-49 (Aug. & Dec. 1948). Part I *in English;* Part II *in French.*

Part I is a discussion of a new method of determining the degree of ripening of viscose by means of potentiometric titration. It was found that when the electromotive force of a characteristic inflection in the potentiometric titration curve is plotted against a measure of the degree of viscose ripening, a sharp minimum occurs at a point corresponding to the optimal degree of

ripening. Evidence indicating the formation of sodium dithiocarbonate in viscose during ripening is offered. This fact leads to a reasonable postulation of the complete scheme of reactions occurring in a ripening viscose. From further investigations, reported in Part II, it was found, by interpretation of the curve for the potentiometric titration of viscose with 0.1 *N* Ag NO_3, that the sulfur compounds of the viscose exist in the "ortho" form. This leads to a new theory for the ripening of viscose.

Solubility of cellulose nitrate as a function of the degree of polymerization. Philip C. Scherer & Frank J. Mauselli, Va. Polytechnic Inst. *Rayon & Syn. Tex. 30,* 47-9 (Feb. 1949).

This is a report of investigations carried out to determine the controlling effect of the degree of polymerization upon the solubility of cellulose nitrate. A sample of cellulose nitrate was separated into a series of fractions differing from each other with respect to D. P. but retaining their homogeneity in respect to nitrogen content. Each fraction was then subjected to a process to determine its solubility under controlled conditions and, from the solubility data so obtained, an attempt was made to correlate the D. P. with the solubility.

Some theoretical considerations on the dynamic properties of plastics. N. F. Astbury. *Proc. Roy. Soc., Series A, 196,* 92-105 (Feb. 22, 1949).

This is a theoretical discussion with possible application to the development of specific types of synthetic textile fibers. It is pointed out that there is a similarity between the mechanical behavior of plastics and the electrical behavior of certain dielectrics. From this is derived a mechanical stress-strain relationship for plastic materials.

Structure of cell walls. I—The classical theory and recent studies. II—Modern research and rival hypotheses. M. A. H. Tincker. *Fibres 9,* 417-19 (Nov. 1948); *10,* 5-6 (Jan. 1949).

Part I is a discussion of some general facts concerning the cell walls of plants, the stretching of the cell wall, and the bonding of the walls together. Part II deals more specifically with the cellulose of the walls, and shows how modern technique has contributed to the knowledge of the structure of cell walls of simple plants and the structure of the economically important fibers.

Survey on the results of radiographic examinations of superpolyamides. Brill. PB L 73632; 5200-5210 (and 6 unnumbered frames), 1940.

Bibl. Sci. Ind. Reports 6, 1137 (Sept. 26, 1947); Price: Enlargement print $2.00; *in German.*

Thermodynamics of high polymer solutions. IV. Phase equilibria in the ternary system: Polymer—Liquid 1—Liquid 2. Robt. L. Scott. *J. Chem. Phys. 17,* 268-79 (Mar. 1949).

This is a theoretical treatment, of interest in the development of synthetic fibers, in which 2 approximate methods of calculating equilibrium phase diagrams in ternary systems of polymer and mixed liquids have been compared with exact phase diagrams based upon the Flory-Huggins equations. It is concluded that both a "single-liquid approximation" and a "complete immiscibility approximation" are only good for very crude qualitative considerations.

Thermodynamics of high polymer solutions. V. Phase equilibria in the ternary system: Polymer 1—Polymer 2—Solvent. Robert L. Scott. *J. Chem. Phys. 17,* 279-84 (Mar. 1949).

This is a thermodynamic analysis of phase equilibria of interest in synthetic fiber research. It leads to an explanation of the usual incompatability of different high polymers in solution. Unless their heat of mixing is virtually zero or negative, 2 high polymers are always immiscible in the absence of a solvent; the primary role of the solvent is non-specific, being merely that of diluting the polymer mixture and decreasing the heat of interaction of the polymers.

ABRISS DER CHEMISCHEN TECHNOLOGIE DER TEXTILFASERN. [Introduction to the Chemical Technology of Textile Fibers.] H. E. Fierz-David. Basel, Verlag Birkhaeuser. 297 p. Price: Sw. 36.50.

Subjects covered in this work include the structure of natural and synthetic fibers, textile auxiliaries, singeing, desizing, bleaching, dyeing, and mechanical finishes. The work is intended primarily for students.

TEXTILE EDUCATION AND RESEARCH J

Basic research benefits textiles. Milton Harris. *Rayon & Syn. Tex. 30,* 39-41 (Mar. 1949).

In a paper presented at the annual meeting of the Textile Research Inst., the importance of basic research to industry is stressed. The importance of coordination between management and the technologist, the function of research teams, and the relation of production and research are also discussed.

Scottish Woolen Technical College runs its own textile mill. Anon. *Textile Recorder 66,* 50-2 (Jan. 1949).

This is an account of the facilities and activities of a mill operated by the Scottish Woolen Technical College at Galashiels. The mill, which is run on commercial lines and which realizes a profit, is used for the instruction and training of apprentices and students of the College, and for research and pilot-plant purposes.

Textile research achievements in 1948. J. B. Goldberg, J. P. Stevens & Co., Inc. *Textile Bull. 75,* 39-40, 42, 44, 46 (Jan. 1949).

Following the pattern established with a similar report for the year 1947, advances in all branches of textiles during the past year are discussed as they pertain to: (1) fibers and yarns, (2) manufacturing methods and equipment, (3) dyeing and finishing products and operations, (4) laboratory instruments and techniques, and (5) research organization activities.

Textile research in Sweeden. Nils Gralen. *Fibres 9,* 420-3 (Nov. 1948).

This discussion of textile research in Sweden includes: research centers, the approach to research, studies in wool, testing and other investigations, spinning problems, and cooperation and interchange of ideas.

Textile terms and definitions. *J. Textile Inst. 40,* P44-P48 (Jan. 1949).

This is continuation of the work of the Terms and Definitions Committee and lists a number of tentative terms on which discussion is invited. Amendments to definitions published in the *J. Textile Inst. 38,* P615-P628 (1948) are also given. (See TTD: *5,* 635-6).

PUBLICATIONS AND PATENTS, JULY-DECEMBER 1948. Southern Regional Research Laboratory, New Orleans, La. AIC-188 (Supplement 2) Feb. 15, 1949. 18 pp. Free.

A number of papers of textile interest are included in this collection of abstracts of publications and patents of the Southern Regional Research Laboratory for the period July-Dec., 1948. Single copies of available reprints of papers abstracted may be obtained upon request to the Laboratory at 2100 Robert E. Lee Blvd., New Orleans 19, La.

THE WONDER BOOK OF WOOL. The story of wool for children, aged 8 to 12 years. Price: 6d.

THE BOOK OF WOOL. The story of wool for children, aged 12 to 16 years. Price: 1/9d.

THE WORLD BOOK OF WOOL. The story of wool for those aged 16 years and upwards, including adults. Price: 2/–. (Published by the International Wool Secretariat, Dorland House, 18-20, Regent St., London, S. W. 1.).

There is no need to hesitate in praising these little books for they have succeeded in a field of notorious difficulty. The skillful presentation in simple terms of scientific and technical matter calls for gifts possessed by a very small minority of the community. In this respect the first of the books is unusually successful. The carping critic could say that some of the illustrations could have little meaning for the children of 8 to 12 years, but the book will undoubtedly create a thirst for knowledge. Small popular works on a technical

subject as happy and successful as these have rarely been produced.—*J. Textile Inst.*

YEAR BOOK OF THE TEXTILE INSTITUTE. Manchester, The Textile Institute, 1948. 198 pp. Price: 10s.

The Year Book . . . deals with Standardization in Textiles, and incorporates a comprehensive list of textile terms and definitions already recommended by the Institute. Details are given of the work done by the Institute in connection with yarn counts systems; the determination and designation of twist in yarns; moisture in relation to textile materials; shrinkage on laundering; water-repellency tests and measurement of cloth thickness, and the British Standards covering these subjects, based on the Institute's specifications, are included. Much useful information relating to technical education is provided and other activities of the Institute are covered comprehensively.—*Fibres, Fabrics & Cordage.*

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